

TRAINING COURSE FOR REPRESENTATIVES OF
THE SHERWIN-WILLIAMS CO.

TEXT NO. 11

S-W FLAT WALL FINISHES--INTERIORS

Flat-Tone

Flat-Tone Mixing Size

Flat-Tone Multi-Color

Flat-Tone Glazing Liquid

Flat-Tone Glaze and Stencil Colors

Flat-Tone System Effects

SWP Flat White

Master Painter's Flat White

Decotint



THE EMBLEM OF
QUALITY AND SERVICE

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SHERWIN-WILLIAMS PRODUCTS

FLAT WALL FINISHES

People today have an increasing appreciation of the artistic, sanitary and protective values obtained through the use of paint on interior walls. The interior walls of a structure constitute most of the visible surface and for that reason it is exceedingly important that they be given careful attention. In the ancient civilizations of Babylonia and Egypt mural (wall) painting was confined exclusively to royal dwellings, temples, and tombs; among the Greeks and Romans the wealthy nobles painted the walls of their homes. Indeed, until the beginning of the 19th century interior wall decoration was confined very largely to churches, cathedrals and state buildings.

The beauty of these marvelous decorative effects created a desire for an artistic treatment of the walls of the home, the store, the office building and in fact nearly all buildings used by this present progressive civilization. So general and persistent became this demand in America for decorative effects on interior walls that Gardner goes so far as to say that today "proper DECORATION OF THE INTERIOR of dwellings and public buildings has become of even GREATER IMPORTANCE than the PROTECTION AND DECORATION OF EXTERIORS."

In response to this demand for the beautiful and the colorful on interior walls came wall paper. It was for decorative purposes largely that wall paper came into use, and wall paper should go down in history as having made a real contribution to artistic interiors. But wall paper had very serious limitations, it seems, chief of which were: 1st, it was NOT SANITARY; 2nd, it was EASILY SOILED and scratched; 3rd, it was NOT WASHABLE; 4th the colors and DELICATE TINTS QUICKLY FADED; 5th, the AMATEUR COULD NOT APPLY IT EXCEPT WITH GREAT DIFFICULTY and "lots of mess"; 6th, it was NOT ECONOMICAL. Yet in spite of all these serious shortcomings wall paper pointed the way to the goal.

1. Why was wall paper NOT SANITARY? In his Paint Technology and Tests, page 252 ff. Gardner says: "There is, moreover, an increasing demand for harmonious effects and the production of MORE SANITARY CONDITIONS than have prevailed in the past. Up until a few years ago a great variety of wall papers of more or less pleasing appearance were almost exclusively used for the decoration of walls in the interior of buildings, and their application was commonly considered the most effective means of wall decoration. There seems to be no question, however, that the use of wall paper is steadily decreasing and that the art of interior decoration is undergoing a transition to the almost universal use of paint.

"Modern progress demands the maintenance of sanitary conditions for the benefit of the public welfare, and there is no doubt that from the standpoint of sanitation and hygiene, properly painted wall surfaces are far superior to papered walls. There is an abundance of evidence which shows that dust germs may easily be harbored and thus disease transmitted from wall paper. In the tenement houses, which are common to the larger cities, and to a lesser extent in the dwellings

found in smaller communities, where tenants are more or less transient, the continued maintenance of sanitary conditions presents a difficult problem. Infectious and epidemic illnesses generally leave behind bacilli of different types, which may find a culture medium in the fibrous and porous surfaces presented by wall paper, backed up as they invariably must be by starch, casein, or other organic pastes. Occasionally, the restrictions of local boards of health provide in such events for proper fumigation, but too often no precautions are taken to destroy the disease germs which are caught in the dust which collects on wall paper. As a rule, both tenant and landlord are oblivious to all conditions which cannot be readily seen or detected. Burning sulphur, one of the most effective means of fumigation, will generally cause bleaching and consequent fading of the delicate colors used in printing the designs upon wall paper. Washing of the paper with antiseptic solutions will destroy its adhesiveness to the plaster and often cause bulging and general destruction.

"In HOSPITALS, where it is necessary to maintain sanitary conditions, the walls are invariably painted, and requirements should demand the USE OF PAINTS WHICH CAN BE WASHED FREQUENTLY, so that there will be no possibility of uncleanness. Inquiry made of a prominent surgeon connected with one of the large metropolitan hospitals substantiated the writer's findings regarding the greater sanitary value of wall paint, and brought forth the information that in hospitals under construction provision had been made for the finishing of walls so that a hard, non-absorbent and washable surface might be obtained. The same authority stated that the common practice, in apartments and tenements, of covering the old wall paper over with a layer of new each time a tenant moved in, should be condemned, and that from a hygienic standpoint the use of sanitary wall paints should be advocated in all dwellings as well as public buildings.

"IF SUCH CONDITIONS ARE MAINTAINED IN HOSPITALS WHERE SPECIAL ATTENTION IS PAID TO SANITATION, IT WOULD APPEAR THAT SIMILAR PRECAUTIONS SHOULD BE EQUALLY AS NECESSARY IN PUBLIC BUILDINGS AND IN DWELLINGS—WHEREVER, IN FACT, PEOPLE CONGREGATE TO LIVE."

Gardner writes about the DEFECTS OF WALL PAPER as follows: "It recently occurred to the writer to investigate the conditions which obtain in many apartment houses in the larger cities. Inspection of a number of such places, in which wall paper had been exclusively used on the walls, showed generally bad conditions; bulging of the surfaces, caused by dampness in the walls, which had loosened up the binder, as well as peeling and dropping of the paper from the ceilings, were frequently observed. IN MANY CASES A SHABBY APPEARANCE WAS SHOWN, ACCOMPANIED BY AN ODOR WHICH SUGGESTED DECOMPOSITION OF THE PASTE BINDER USED ON THE PAPER. THE WRITER WAS IMPRESSED WITH THE FACT THAT SUCH CONDITIONS COULD EASILY BE AVOIDED BY THE VERY SIMPLE EXPEDIENT OF USING PROPERLY MANUFACTURED WALL PAINTS, WHICH ARE SO EASILY MADE DUSTPROOF AND WATERPROOF.

"Samples of wall paper, which had been applied to plastered walls for a year or more, were obtained, and examinations under the microscope showed a most uncleanly surface. Cultures were made of these samples, and bacilli of different types were developed in the culture medium in a short time.

"EXPERIMENTAL EVIDENCE. That the above conditions could not have existed, had proper wall paints been used, seemed doubtless, and suggested a carefully conducted experiment to prove the relative sanitary values of wall paper and wall paint. A large sheet of fibre board, such as is occasionally used to replace plastered walls, was painted on one side with a high grade wall paint, three-coat work. A similar sheet was papered on one side with a clean, new wall paper. These test panels were placed where unsanitary conditions, such as dampness, foul odors, and a scarcity of air were present. After a short period of exposure, the panels were taken to the bacteriological laboratory and a small section of the painted surface, about two inches square, as well as a small section of the papered surface of similar size, were removed and used for making cultures. In each case the surface of the section under test was washed with 100 c. c. of distilled, sterilized water. The washings which dripped from the surface were collected in a graduated flask. One c. c. of the washings was used in each case, admixed with bouillon and again with agar-agar. THE ENORMOUS DEVELOPMENT OF BACTERIA IN THE BOUILLON, TREATED WITH THE WASHINGS FROM THE WALL PAPERED SURFACES, WAS SUFFICIENT EVIDENCE TO CONVINCE ONE OF THE GREATER SANITARY VALUE OF THE WALL PAINT, THE WASHING FROM WHICH GAVE A CULTURE PRACTICALLY FREE FROM BACTERIA. The colonies of bacteria shown in the petri-dish test made of the washing from wall paper further supports these findings. IT WILL BE NOTICED THAT THE TESTS MADE FROM THE WASHINGS OF THE WALL PAINT SHOW PRACTICAL ABSENCE OF BACTERIA, AND WAS CLEAR, AS WAS THE BOUILLON-SOLUTION TEST OF THE PAINT. THE WASHINGS FROM THE WALL PAPER SHOWED ACTIVE DEVELOPMENT OF BACTERIA BOTH IN THE BOUILLON AND AGAR TESTS."

From this evidence, so scientifically and indisputably established, we are convinced that the attempt to satisfy the demand for artistic treatment of interior walls by use of wall paper is not altogether successful. Unclean, germ-laden walls are injurious to health. Paint keeps walls clean and sanitary.

2. Wall paper was very easily SOILED BY TOUCH. Finger-marks registered on it rapidly, furniture rubbing it quickly abraded it. Any attempt to remove the dirt or spots caused smear and discoloration, and to cover scratches and breaks with paper-patches was to produce the effect similar to that of a pair of patched pants; all right in their place, but certainly not exactly artistic.

3. A haven and heaven for germs, easily soiled, wall paper WILL NOT WITHSTAND WASHING; so that once become unsanitary and soiled it must be either removed and a new paper applied to the wall—or it

must remain on the wall, unsanitary and unsightly, its beauty marred by dirt; and Gardner points out that one layer of new paper placed over an unsanitary one creates even a more unsanitary condition. A graveyard is till a graveyard even though we do cover it with beautiful grass and flowers.

4. Wall paper comparatively quickly FADES OR DISCOLORS, making it necessary to repaper frequently in order to maintain decorative harmony. But frequent repapering is expensive.

5. The PROPER APPLICATION of wall paper by the amateur is a very difficult and almost hopeless task, and the mess involved in preparation and application is great. Even the expert paper hanger leaves an awful mess for the housewife to clean up. The proper cutting of the paper to fit the various parts of the wall is no child's play; and putting the organic paste on the back of the paper is about as difficult as freeing one's self of a flock of fly-paper.

6. Wall paper is not an ECONOMIC decorative or sanitary type of finish, for since it fades and discolors we shall have to repaper frequently in order to maintain decorative harmony.

To keep wall paper free from bacteria, as Gardner points out, is almost impossible; if we attempt to keep it clean and sanitary by washing we simply add to the impossibility; renewal of the paper on top of the old likewise simply "covers up the germs" but they are still there having a regular holiday; to remove all the old paper and replace it with new paper is expensive, and this in turn becomes unsanitary very quickly. To do the job right, we found it necessary to employ the services of a professional, usually an expensive operation.

Before dismissing the discussion of wall paper we must note that within the last few years new materials have come to be used in wall surfaces, such as the various composition boards, canvas, etc.—on which it is very difficult and in many cases impossible to apply wall paper, without expensive preparation of the surface.

Wall paper, then, was not adequate to the need; but the demand for decorative effects on interior walls continued to increase, and it was left to the paint and varnish manufacturer to solve the problem—and how well he solved it!

Paint has brought within the reach of every home in our country the beautiful and artistic interior effects of cathedrals and royal palaces. Formerly so expensive and reserved for kings, potentates and nobles, paint with its decorative possibilities has become the possession of the common people.

After a while, when people saw the marvelous decorative effects POSSIBLE to be produced quickly and cheaply on walls through the use of paint there developed a desire for a FINISH WITHOUT A GLOSS. This required research by the paint manufacturer.

For a long time oil paints and water-pigment paints corresponding to our present kalsomine paints were the two types of paints commonly used for interior walls. It is characteristic of oil paints when applied to the surface and dry that they produce a finish with a gloss. It is characteristic of kalsomine paints to dry flat for they carry no oil; but then they have comparatively little durability. It was found that lead mixed with turpentine as the vehicle would produce a flat finish but not a very durable finish. Likewise in a paint comprised of white lead, linseed oil and turpentine the degree of gloss in the finish may be regulated by the proportion of oil to turpentine, but as the oil content decreases so does the life of the film.

The paint manufacturer, therefore, was called upon to develop a finish at once flat and durable. Curious enough his selection lies not in the vehicle so much as in the PIGMENT. He finds that LITHOPONE, the newcomer in the pigment family, has the virtue of carrying enough oil to insure firm adhesion of the film to the surface, durability, but with the natural ability to remain flat.

There are a number of manufacturers of Lithopone in the United States. The process of manufacture is a most complicated, chemical one; and the product obtained today may not be exactly like that produced tomorrow. The better to assure ourselves complete control of the uniform quality of our Lithopone, OUR COMPANY MANUFACTURES ITS OWN LITHOPONE.

LITHOPONE

Mr. Henry Hain gives this interesting description of our Lithopone and its manufacture:

"The manufacture starts with Zinc on one hand and Barium compounds on the other, with the idea in view of forming extremely pure solutions of each whereby, by subsequent precipitation, a combination solid pigment can be produced.

"In doing this, we have a department known as the Zinc Liquor Dept., in which Spelter, or metallic zinc of the best grade and purity that we can produce is dissolved in Sulphuric Acid to form a solution of Zinc Sulphate. This solution is purified by admixture of chemicals, so that the final Zinc Sulphate is in the purest possible condition.

"In another department we start with high-grade Barium Ore, similar to that from which Barytes is manufactured, by merely grinding and washing, and convert this insoluble ore into a soluble Barium compound by furnace treatment. This is known as the reduction operation in which carbon of finely ground coal is mixed in an airtight cylinder and heated to a point where chemical reaction takes place with the carbon to take oxygen from the Barium Sulphate, leaving Barium Sulphide as a residue. Barium Sulphide is soluble in water and when leached, goes into solution, then purified by filter pressing.

"These two solutions--Zinc Sulphate and Barium Sulphide, are then precipitated by usage of molecular equivalents in weight, at which time a white solid is formed, consisting of a mixture of Barium Sulphate and Zinc Sulphide. This compound, or crude Lithopone, is then filter-pressed, dried and the dry material put into muffle furnaces (these being as nearly airtight as possible) and raised to a temperature of about 1500 degrees. While at this temperature, the material is suddenly withdrawn from the furnace and drenched with water, this operation causing a considerable shrinking of the texture of the materials which increases its covering power and makes it a suitable pigment for our purposes. The material is again filter-pressed to eliminate the water, ground and packed ready for shipment in suitable containers, to our various factories."

So much for its composition; now what particular properties does Lithopone possess which has caused such a revolution in the manufacture of interior flat wall finishes?

Heckel says: "Lithopone has fineness, whiteness, body, opacity."

Mr. Dudley, the preeminent chemist of the Pennsylvania Railroad Company makes this remarkable statement about Lithopone: "When the material first appeared we examined it and it seemed to be the thing we were hunting for, something that was free from the objections to white lead and zinc white.—Experiments with it seem to indicate that it has covering power, body, working qualities and chemical inertness."

Toch says of Lithopone: "As an interior white, a first coat white, a ready-mixed flat paint for a surface, or as a pigment in the lighter shades for floor paints" (as in our S-W Inside Floor Paint) "LITHOPONE CAN NOT BE EXCELLED FOR ITS BODY, DURABILITY, HARDNESS, FINENESS OF GRAIN, AND EASE OF APPLICATION. AS A MARINE PAINT, EITHER AS A FIRST COAT OR FOR MAKING NEUTRAL WHITES WHERE OTHER WHITE WOULD BE NECESSARY, IT IS FOUND TO OUTLAST BOTH ZINC OXIDE AND LEAD CARBONATE" - - - - "Lithopone does not oxidize (dry) progressively and this single feature has made it invaluable to the table oilcloth and floor oilcloth industry throughout the world." (We recall that Lead and Zinc in paint oxidize so progressively that they do not cease oxidizing until they oxidize themselves right off the surface.)

Moreover, it is found that Lithopone permits the use of a wide range of colors. for unlike lead and zinc, it will not react destructively on other pigments or vehicles used with it, as Toch further remarks: "Owing to its chemical composition it is stable in every medium known for paint purposes, excepting those which are highly acid."

Our good friend and highly respected chief consultant chemist of the National Lead Company, Mr. Sabin, in his Technology of Paints and Varnish, page 187 ff. says this about Lithopone: "It is a white powder of fine color and unusual opacity, and is much used for a certain sort of paint. Practically all of it is used in making what is termed

interior flat finish, for plastered walls. NEITHER WHITE LEAD NOR WHITE ZINC CAN BE USED WITH ROSIN, AS THEY RAPIDLY REACT TOGETHER; BUT LITHOPONE IS INACTIVE. . . . Is liked as a wall finish; it can be tinted with other colors, but is generally used white or in some very pale color."

Lead and Zinc Oxide do not seem to behave well at all in the presence of certain binders. Concerning this, Sabin remarks: "Lithopone unlike white lead and white zinc, can be mixed with shellac varnish."

Because of these many wonderful properties peculiar to Lithopone this pigment stands out as the supremely satisfactory pigment for interior flat wall finishes and when mixed with the proper vehicles the resultant paint meets all the exacting requirements of the interior flat wall finish which is so much desired.

The requirements of such a finish are that:

1st—It must dry "flat" in tone—no gloss whatever.

2nd—It must, for economic reasons, have a binder that will bind it to the wall securely.

3rd—It should be finely ground, so as to give a soft, smooth, uniform velvety appearance.

4th—It must not readily show finger marks, smears, scratches or dirt.

5th—It must absolutely withstand repeated washing with either cold or warm water.

6th—It must offer a wide range of colors for the many different tastes and settings whether of the home, hotel, public building, church or what not.

7th—The colors, shades and tints must be permanent.

8th—It must have, also, great opacity or hiding quality.

9th—It must be applicable on cloth, wood, metal, composition board, plaster, brick, cement, etc.

10th—It must be non-poisonous.

11th—It must be chemically inactive in order that the film may be indefinitely free of checking, chipping, flaking, chalking, cracking, peeling or changing color.

12th—It must sell at a price within the reach of all.

This is a full-size set of requirements but the Sherwin-

Williams Company, in 1906, produced a flat wall paint that completely met these requirements—S-W FLAT-TONE.

S-W FLAT-TONE

The Sherwin-Williams Company was the first paint and varnish manufacturer in America to produce the modern prepared Flat-Tone paint. There is only one "Flat-Tone" on the market although many paint manufacturers produce finishes of non-gloss nature for interior walls. Flat-Tone is a registered Sherwin-Williams trade-mark, but is now a term used by many people in referring to any flat wall paint.

In the composition of S-W Flat-Tone we have LITHOPONE reinforced by a small percentage of that sturdy reinforcing pigment, Magnesium Silicate.

MAGNESIUM SILICATE. The virtues of this splendid REINFORCING PIGMENT we have seen in SWP and other good S-W paints. Briefly, the characteristics of magnesium silicate are: fineness, lightness of gravity, inertness, physical fluffiness, rod-shaped particles, unctuousity (this term describes the smooth, soft ease which it lends to the application of paints of which it is a part), and finally it aids in keeping the other elements of the paint in suspension in the can thus preventing "settling." We have then in S-W Flat-Tone a combination of Lithopone and Magnesium Silicate as our pigment portion carrying out the well-established scientific principle that a COMBINATION OF GOOD AND PROPERLY BALANCED PIGMENTS IS BETTER THAN ANY ONE OF THEM USED ALONE. Here we have two pigments entirely agreeable to one another and each bearing remarkably good properties for use on interior walls.

The VEHICLES of S-W Flat-Tone are:

LINSEED OIL. Always the life of the paint film. When applied it dries to a hard tough film, and has excellent binding quality.

MINERAL SPIRITS. Who can forget the romantic development of this useful Thinner? Recall the study of Thinners in Text 10. Mineral Spirits is used here for the two-fold purpose of (a) putting the paint into liquid form, so that when it reaches the consumer the paint is ready to be EASILY APPLIED, and (b) keeping the paint in a fresh, healthful condition in the can.

DRIER. Its place here is earned because when the paint is applied the Drier helps it to dry more quickly. The quality of the Drier in S-W Flat-Tone follows the true principle which we learned in our study of Driers in Text 10, namely: "Use the best oil Drier that can be made and then as little as possible." The Drier here is the best for the purpose intended and makes its important contribution with the minimum disturbance to the paint film.

S-W Flat-Tone met all the requirements heretofore enumerated and immediately took its place as one of our most important lines.

After twenty years we find no other flat paint on the market that contains such a wealth of good properties and that gives such completely satisfactory performance.

The writer of this text was invited to witness a long series of tests of the various flat white paints, including S-W Flat-Tone. Five cans representing five different manufacturers' flat-wall paints were opened. The cans were not labelled and the expert who opened them did not know the identity of the products. Their identity was known only to the executive committee in charge. All closely examined the contents of each can and noted the condition of the paint, after which each of us took, a turn in applying the paint to a panel.

The cans having been marked A, B, C, D, E, the men present made careful notes regarding each of the five wall paints.

Here are the observations and conclusions of the tests.

Upon opening the cans it was observed that some of the paints looked like "soup;" they had "settled out", and the vehicle did not look "healthy." Some looked "anemic" and pale, sickly, bluish white; others were so extraordinarily hard in the bottom of the package that it required 30 minutes to "break them up." Several were so thick that the amount of reducer required to bring them to proper consistency for application threw them out of "balance." This affected their working qualities so that brush marks were noticeable, drying time was changed and hiding power decreased.

Some were difficult to apply because of the "pull" under the brush, as if one were brushing a near-hard glue solution; others dried so quickly that the operator could not "go back into" them because the paint "set up" so rapidly. Again two or three of them when applied had no "depth" or beautiful "flat" opacity--they were simply "dead."

But the paint from can C was a beautiful, natural, clean white; in it there was no "bluish sick-white effect;" its tone was clean--white and clear; it was fluffy and smooth and clean; it brushed on with such smoothness and ease that it reminded one of the smooth, soft feeling of cream upon the roof of the mouth; it set up just quickly enough to permit the operator ample time to "go back into" it; it did not show laps or brush marks; its opacity or hiding power was "final" and complete, that is, C utterly hid the original surface, which was a medium tan; and the "flat" opacity had a beautiful far away depth-tone to it; C "looked" like GOOD PAINT, and had the "feel" of GOOD PAINT; throughout all the tests of all five paints repeatedly were we lured back to "C". C WAS S-W FLAT-TONE. Anyone can make these tests and there is a whiz of a "kick" in the operation.

In the physical world the basis for establishing irrefutable scientific truth lies in repeated physical demonstration. The superiority of S-W Flat-Tone is a physical, scientific truth based upon years of practical demonstration.

The "washability" of S-W Flat-Tone can be demonstrated in such a way as to literally startle a prospect into intense interest—and arousing interest is a necessary step in good salesmanship. Take a small piece of beaver board and brush on a coat of Flat-Tone. When it is thoroughly dry let the PROSPECT spatter some fountain pen ink, dirt and lead pencil marks on the painted panel; then take a clean sponge, and with water and Flaxoap, wash the board clean. Such a demonstration will "clear the bases and win the game."

Colors. One of the fascinating attractions about S-W Flat-Tone is the wide range of beautiful colors offered. Over fifteen of them are offered, all of which lend themselves readily to intermixing. This is due in part to the nature of the basic pigments, lithopone and magnesium silicate, used in S-W Flat-Tone. It is a most remarkable property of these colors that when applied to the wall, even the most delicate shades can be repeatedly washed and they will not fade. Since one of the many important reasons for Flat-Tone is its DECORATIVE value it is highly important that in the repeated washing of the wall the colors and delicate tints shall not fade.

Besides White, the following beautiful colors are offered in S-W Flat-Tone:

Ivory White	Ivory Tan	Caen Stone	Sky Blue
Cream	Tan	Pearl Gray	Pale Green
Buff	Cocconut Brown	Shell Pink	Bright Sage
Light Yellow	Olive Tan	Silver Gray	Forest Green

Application. The application of S-W Flat-Tone is discussed at length in the following pages.

The Market. All paint dealers, master painters, painting contractors, architects, decorators, public buildings, County and State departments of public buildings, restaurants, hotels, schools, stores, hospitals, theatres, churches, and every household in the land.

Sizes. Quarts, $\frac{1}{2}$, 1 and 5 gallon cans and barrels.

S-W FLAT-TONE MIXING SIZE

First produced in 1906

S-W Flat-Tone Mixing Size is a sealer of those surfaces particularly which are to receive S-W Flat-Tone and it should be used as a size for any other good quality flat or semi-flat wall finish.

Now the successful performance of S-W Flat-Tone or any other interior flat-wall paint and its permanent magnificence depends upon how thoroughly the surface has been prepared. It is hardly necessary to repeat that the surface must be dry and free from grease and dirt.

In our study of Fillers and Sealers in Text 10 we learned how absolutely essential to good finishing is the (a) FILLING OF THE PORES; and, on a great many surfaces and under a great variety of conditions (b) THE SEALING OF THE SURFACE. This is ESPECIALLY true of modern plaster, fabric and brick interior walls, for these materials, when not previously finished, are exceedingly porous—some more than others.

The materials with which most interior walls are faced is plaster and this plaster must be dry before applying the paint. The average new plaster wall contains about a gallon of water to one square yard of plaster; we can readily see the need for allowing plenty of time for the plaster walls to dry before applying the paint. We have seen that moisture behind a paint film is "the pestilence that wasteth at noon day and the terror that flieth by night." In new construction at least ninety days should be allowed for the walls to become thoroughly dry. Some paint authorities claim that for the best results one year should elapse before the exquisitely delicate paint film is applied to a new plaster wall surface.

"Hurry," "Push the Job," "Rush,"—these are imperatives which the modern architect and contractor regret to hear but which they too often are compelled to heed. We, therefore, today find that in new construction the roof is not finished before the painters are called in to apply the most delicate, beautiful paint film upon surfaces on or behind which moisture certainly lurks. The SURFACE may be dry so far as eye and touch can determine but unless ninety days or more are allowed for the walls to dry, it is very likely that they will contain moisture. So we have this most unfortunate situation; the outside wall exposed to the elements is painted, thus sealing the moisture back of its surface; the inside walls are likewise painted thus sealing the moisture back of its surfaces. We have then moisture between two sealed surfaces. Now the moisture must go somewhere—it must inevitably free itself. Greater heat on the outside of the building will draw the moisture out and if the heat is greater on the inside then the moisture will be drawn in. IN EITHER CASE THE PAINT FILM WILL BLISTER OR PEEL, or as Heckel says, "be pushed off". The plaster, therefore, MUST BE DRY.

In order to secure a good finish on plaster walls not only must the plaster be dry but IT IS IMPERATIVE THAT IT BE SEALED. If the plaster is sealed there is no limit to the decorative effects to be secured through our Flat-Tone finish. SEALING THE SURFACE establishes a non-absorbent and uniform base for the paint film, preventing "striking in," "fading," or "falling through," and as the painter would say, "it stops the suction." In the case of plaster and many brick walls the sealer has an additional function. There may be present, in plaster particularly, free alkali which tends to discolor and destroy the life of the paint film; if the surface of plaster is sealed before the paint is applied, the sealer sets up a defense against the alkali.

We recall that in painting WOOD we fill the pores and seal the surface, usually by putting a liberal amount of oil in the priming coat. On plaster where the porosity is much greater than in wood it is absolutely necessary to do something more than to use additional oil in the priming coat. This treatment is known as SIZING, the material is known as a SIZE. The most commonly used sizes are linseed oil, varnish, and glue. SIZES SEAL THE SURFACE.

Raw linseed oil and cheap varnishes may be applied "as is" directly to the surface, or if desired may be mixed with the paint, making what might be called a combination sizing and priming coat. Glue size must be used independently, that is, it can not be mixed with the paint. Some painters apply glue size directly to the plaster as the first operation, while others prefer to apply it over the priming coat as the second operation.

S-W Flat-Tone Mixing Size everlastingly seals the surface; when dry it becomes hard, tough, elastic; qualities which account for its wide popularity among painters regardless of whose flat wall paint they may use. A Size can be no better than the raw materials used in it plus brains and manufacturing facilities. S-W Flat-Tone Mixing Size is a varnish type Size; it is made of resins especially selected for their high quality and suitability. Originally designed especially for use with S-W Flat-Tone this Size has all those high qualities which ably fit it for association with S-W Flat-Tone.

Now the market abounds in all kinds of Sizes, some good, others not so good. Many so-called "reliable" Sizes which sell at a low price are rosin-oil mixtures. These may act all right for a SHORT while but they dry BRITTLE, have comparatively LITTLE ADHESIVE POWER, and therefore shortly FALL AWAY FROM THE SURFACE, carrying the paint film with them.

Another extraordinary quality of Flat-Tone Mixing Size lies in the perfection of "balance" of hardness, adhesion and elasticity. These qualities in our Mixing Size prevent surface cracking, so common a fault where the paint film has been put over a so-called "cheap but good Size." The cracking is due to the brittle, non-elastic condition of the Size.

When painters use S-W Flat-Tone Mixing Size they are following a fundamental rule of good paint practice, namely, the undercoating of a paint film should be of the same high degree of quality as the finish-coat.

APPLICATION—

NEW WORK—INSIDE PLASTER, BRICK, CEMENT SURFACES AND PLASTER BOARDS.

First or Sealing Coat—

Surfaces such as plaster, brick work and cement vary so much in their character and texture that it is impossible to give specific directions that will cover every case. The average surface will be sealed by using a mixture composed of about equal parts of Flat-Tone Mixing Size and Flat-Tone of the desired color.

NOTE: First or sealing coat should be applied generously. At least twenty-four hours for hardening and drying should be allowed between coats. With the darker colors, one coat in addition to the sealing coat will usually cover and give good results; with the lighter colors, two coats in addition to sealing coat are generally required.

Second Coat—

S-W Flat-Tone applied as it comes from the can. Some painters add a small amount of Mixing Size to the Second and Third coats.

Third Coat—

S-W Flat-Tone applied as it comes from the can. Some painters add a little raw linseed oil to the third coat in order to produce a little sheen on the finish.

Thinning—

Thinning may be necessary, as the character of wall surfaces varies under certain conditions; and some painters find Flat-Tone too heavy. Pure spirits of turpentine only should be used for this purpose.

NEW WORK—SIZED MUSLIN, SANITAS, PRIMED METAL, etc.

Apply S-W Flat-Tone of the desired color, as directed above for second and third coats, no sizing or sealing coats being necessary.

OLD WORK—

Surfaces which have been previously painted with Flat-Tone, or any other flat oil paint, can be repainted with S-W Flat-Tone of the desired color, as directed above for second and third coats, no sizing or sealing coats being necessary. Before starting see that surface is firm, smooth and free from all loose paint.

The Market. All paint dealers, master painters, painting contractors, architects, decorators, public buildings, County and State departments of public buildings, restaurants, hotels, schools, stores, hospitals, theatres, and churches.

S-W Flat-Tone is an excellent material for refinishing window shades.

Recent tests prove that the use of the lighter tints of Sherwin-Williams Flat-Tone Wall Finish will produce a highly satisfactory finish on radiators and will not affect the efficiency of the radiation. This paint tends to bake to a hard film on radiator surfaces and tests made by the Paint Manufacturers Association of the United States upon radiators in their laboratories indicate that such a finish has a life of as high as nine to ten years without showing defects.

Tests made by the American Society of Heating and Ventilating Engineers and also by the Paint Manufacturers Association of the United States indicate that paints made from bronze powders retard the radiation of heat approximately 25 per cent, while paints and enamels made from zinc oxide or lithopone do not appreciably affect radiation one way or the other.

Regardless of what types of paint are used in painting radiators, there is bound to be a slight change of color. White Damar Enamels will yellow slightly, while flat finish, like Flat-Tone and colored enamels, will likewise change color slightly. This is a condition for which a remedy has not been found up to the present, but the results all in all are highly satisfactory.

Now we have seen that S-W Flat-Tone brought with it, along with many other excellent values, an extraordinary range of colors, shades and tints. With these, by certain treatment, we may produce upon the surface that beauty of color and design which we have thought possible to effect only with priceless tapestry and rare lace. By selecting a Flat-Tone color for the background and applying another Flat-Tone color on top of it by the treatment called "Stippling," we obtain an effect resembling the delicate beauty of lace. This treatment of the surface with two or more colors of Flat-Tone, superimposed, is known as S-W Multi-Color Effects.

THE USE OF FLAT-TONE MULTI-COLOR STIPPLE EFFECTS

WHERE TO USE FLAT-TONE MULTI-COLOR EFFECTS—

Flat-Tone is recommended for use over rough or smooth plaster, decorator's canvas or any of the excellent wall boards on the market. Note—Plaster should be thoroughly cured. Paint should not be applied until approximately one month or more has been permitted the plaster wall to become thoroughly dry. A damp wall means free alkali, which causes a peeling of paint.

NEW WORK—FOUNDATION COLOR—

The first coat should consist of equal parts Flat-Tone and Flat-Tone Mixing Size.

The second coat should be reduced with one quart Flat-Tone Mixing Size to one gallon of paint.

OLD WORK OR REPAINTING—FOUNDATION COLOR—

Flat-Tone as applied over a wall previously painted in a good oil paint is to be used just as it comes from the can—no mixing size being necessary. One coat will be sufficient, if this covers satisfactorily.

WALLS COVERED WITH WALL-PAPER—

Flat-Tone is not recommended for use over wall-paper or any wall coverings which are not thoroughly fastened to the wall. Best results are to be had by removing the paper and following instructions for New Work.

STIPPLING—WHAT COLORS TO USE—

Flat-Tone is to be used for all Stipple Effects. The colors to be used are specified for each effect and may be used as they come from the can, although in certain cases for the effect it has upon the color we recommend adding Flat-Tone Mixing Size to the stipple color; one part Flat-Tone Mixing Size to three parts Flat-Tone or one quart Mixing Size to one gallon of Flat-Tone.

Stippling is to be done with a sponge, using a separate sponge for each color specified.

When ready to stipple—which can be done as soon as the foundation color is flatted out and fairly hard—pour or brush out a small quantity of the first stipple color on to a piece of tin or board, as convenient. The sponge is to be rubbed into this instead of dipping into the can. Tap the sponge once or twice on the board to remove any surplus paint, and stipple directly on the wall.

When stippling, tap the sponge straight on to the wall. No turning or twisting motion is necessary or desired. A firm but not too heavy stroke is best.

The process is extremely simple—merely see that an even screen or spotting is secured over the entire wall.

TWO OR MORE STIPPLE COLORS—

Where two or more stipple colors are specified, the next color may, but need not, follow immediately. Take a fresh sponge or clean out the one just used, and stipple directly over the preceding color. It is not necessary to wait until the first stipple color is dry or hard.

In stippling a large surface the sponge may possibly become "loaded." In such a case rinse the sponge out in benzine, gasoline or

turpentine. Squeeze and wipe dry. Wring out of water again to open up the sponge.

Note: Before putting the sponge away, clean with benzine and wash out with soap and water.

SELECTION OF SPONGE—

In selecting the sponge, an expensive one is not necessary, although a good wool sponge will last longer and has a good, even, open texture. The bottom of the sponge is the surface best suited for stippling and should be trimmed or sliced off if necessary to get the interesting flat printing surface.

SOFTEN SPONGE IN WATER—

Wring the sponge out of water so as to soften and open it up.

THE USE OF SHERWIN-WILLIAMS FLAT-TONE GLAZING SYSTEM EFFECTS—

Where it is desired to produce a "mottled" tapestry-like effect known as S-W Flat-Tone System Effects we proceed as with straight Flat-Tone paint, making Flat-Tone, in the desired color, the background of the effect.

S-W Flat-Tone System Effects are made possible through the use of S-W Glaze and Stencil Colors and S-W Flat-Tone Glazing Liquid. There is nothing complicated about the treatment. This SIMPLICITY OF TREATMENT should be emphasized for it will strongly appeal to owners of large buildings such as stores, apartment houses, theatres, etc., who may desire artistic effects but who are afraid of the cost. The housewife also will be encouraged to use this remarkable Flat-Tone by which the beautiful, refining effects of the matchless design of lace and exquisite colors of rare tapestry can be brought to her very home and be her own possessions.

Flat-Tone System Effects are highly desirable in both residences and public buildings. The S-W process of glazing a wall produces an effect of unsurpassed beauty and richness. This glaze coat is of a somewhat translucent nature, permitting the underbody color of Flat-Tone to show through to a degree, depending upon the stippling.

The beauty and range of effects one can produce in this method are limited only by the imagination, good taste and skill of the decorator, but the work is so interesting that a person is glad to experiment and study a bit for best results.

Sherwin-Williams Flat-Tone, which is the foundation for the Glaze Effects, may be applied over either rough or smooth finish plaster, decorators' canvas or muslin or any of the excellent wall boards on the market. New plaster must be given time to dry and cure properly

before paint is applied. Unsized burlap frequently requires a coat or two of good glue size. It is not advisable to paint over wall paper, nor is it safe to paint over other wall coverings which are not thoroughly fast to the wall.

First Coat:

The first coat over rough sand finish or smooth porous plaster, should consist of equal parts Flat-Tone and Flat-Tone Mixing Size. Let dry over night.

Second Coat:

Add 1 quart of Flat-Tone Mixing Size to each gallon of Flat-Tone.

Third Coat:

Use Flat-Tone as it comes from the can. (Note: the third coat may frequently be omitted if the first two have covered well.)

The Glaze Coat:

Allow the last coat to dry for three or four days before glazing.

Sherwin-Williams Flat-Tone Glazing Liquid is to be tinted to the desired tone with Flat-Tone Glaze and Stencil Colors, using care not to make the glaze color too intense. Where two or more color mixtures are specified, tint separate batches of color. Make the various colors of the same relative strength.

First apply a thin coat of clear glazing liquid to the space to be glazed. In a room, coat in the space from ceiling to floor, about six feet wide. Next apply the tinted mixture and stipple immediately, holding a crumpled cloth loosely in the hand, preferably a soft piece of old gingham. Tap the wall with a lifting, twisting movement of the hand.

Where there are two or more colors, apply these in adjacent patches. The color that is to predominate should cover larger spaces of the wall. Draw the colors together somewhat with a brush before stippling (especially on rough plaster or canvas).

To Blend a Wall:

Effects in one color frequently are blended off from the deeper tone at the base to a very light tint at the top. This requires two batches of color, one light and one dark. Estimate the Glazing Liquid necessary (covers about 750 square feet per gallon) and tint about three-quarters of this to the darkest shade wanted. Pour off about one-third of this and add to it an equal amount of clear liquid.

Brush this lighter mixture from the ceiling down to within about four feet of the floor, then apply the darker color, brushing back and forth, well up into the lighter color. In stippling, work from the top down. This will avoid the hard dividing line between the light and dark color. It is possible—but not practical—to blend a two-color effect. In all glazing work, keep brushes cloths, and colors clean.

Note: Do not leave wet glazing rags in a pile—they are liable to ignite.

S-W FLAT-TONE GLAZING LIQUID

S-W Flat-Tone Glazing Liquid, while originally designed to produce the "glaze" in S-W Flat-Tone System Effects particularly, has come to be highly regarded by master painters, painting contractors and architects; many of them insist upon using S-W Flat-Tone Glazing Liquid regardless of whether they use our Flat-Tone paint, and Glaze and Stencil Colors for the painter wants to be sure that he is taking no chances in the quality of his glazing liquid.

S-W Flat-Tone Glazing Liquid has established itself as the highest grade blending and glazing liquid on the market. It has come to be used extensively, with excellent results, for polychroming, wiped enamel finishes, parchment lampshades and similar finishes, in which a translucent or glaze effect is desired.

S-W Flat-Tone Glazing Liquid is packed ready for use, in pints, quarts, and gallon cans.

The market is identical with that of S-W Flat-Tone and in addition, manufacturers of parchment articles; also many paper and wood working plants and manual training schools.

S-W GLAZE AND STENCIL COLORS

Concerning S-W GLAZE AND STENCIL COLORS we should note that for glazing and stencilling work they are recognized universally as containing the highest degree of quality, taking their position alongside of S-W First Quality Colors in Oil; for like them they are made of the most carefully selected and naturally adapted pigments possible to obtain for the purposes intended and are ground and ground until the very maximum degree of color value is developed.

There is such a widespread use for S-W Glaze and Stencil Colors that they should be on sale in drug stores, hardware stores, general merchandising and wall paper stores. Additional markets are the same as for S-W Flat-Tone.

COLORS. Blues, browns, greens, lakes, yellows, white and black.

S-W Glaze and Stencil Colors are made in paste form and packed in 1 lb. metal tubes, the sizes of which vary according to the material difference in weight of the various pigments.

Now we have discussed S-W Flat-Tone, S-W Flat-Tone Mixing Size, S-W Glazing Liquid and S-W Glaze and Stencil Colors and have been amazed at the wonderful, artistic effects which they make it possible to obtain on interior walls.

All about us are evidences of the fact that we are in an age of COLOR. By means of Color we are able to produce the artistic, the beautiful.

The charm and beauty which the exquisitely delicate tints of Flat-Tone produce in home, in church and in public building strike a deep emotion in the human heart.

To assist the home owner, decorator, architect and others to obtain all the beautiful harmony and extraordinary artistic effects which paint has made possible, and particularly Flat-Tone, our company established a special department.

THE DECORATIVE DEPARTMENT with its staff and elaborate facilities is devoted exclusively to the service of giving information and rendering advice concerning decorative problems. Our decorative artists will answer any question along this line and if the plans of a building are submitted to them they will gladly make suggestions regarding color design for the walls and give actual sketches. There is no charge for this service and there is a definite assurance given inquirers that we wish them to feel free of any obligation for this service.

SWP FLAT WHITE

First produced in 1880

Great stress has been laid on the development of new construction materials for the surface of modern inside walls, and on the need of properly preparing these surfaces for good paint finishes. We have studied many good paints which are specially designed to meet all the various requirements which modern interior walls have created. When we recall the supreme excellence of SWP for outside and inside use we ask the question, why not take this great product, SWP, give it a flat finish and thus bring to interior walls and ceilings that wealth of quality, reliability, uniformity and durability which SWP represents so completely?

Well, that is what we have done. SWP Flat White is SWP itself without a gloss and for this reason where a FLAT WHITE FINISH is desired and quality is of first importance rather than initial cost, SWP FLAT WHITE is unexcelled. Many master painters and decorators who do quality work prefer SWP Flat White above all other FLAT white

finishes; and scores of architects specify SWP Flat White for flat wall finishes, rather than straight flat lead paint, because it has none of the weaknesses of the latter. SWP Flat White is also widely used as an undercoater for high grade enamel work.

We do not hesitate to make the statement that SWP Flat White is the best flat white paint that has ever been produced. The difference in price between SWP Flat White and lower price flat paints on the market only emphasizes our experience that a quality paint in the long run costs less because it wears longer and in addition it looks better. Where a good enamel finish is desired, according to paint chemists and good painting practice the ground coat (undercoat) should be of the same high quality as the finishing coats; there is no better undercoat made than SWP Flat White. SWP Flat White is flat, solid and has great "depth;" it is exceedingly opaque, it works smoothly and easily under the brush; it has excellent covering (spreading) capacity and carries a binder that holds it securely to the surface; it gives good tooth to any enamel finish that may be used as a finishing coat over it.

SWP Flat White is washable.

Covering Capacity. 360 square feet of average surface, two coats to the gallon. Two coats give excellent results.

The Market. Master painters, painting contractors, architects, architectural engineers, decorators, office and public buildings, stores and industrial plants.

Sizes. $\frac{1}{2}$ and 1 pint, quart, $\frac{1}{2}$, 1 and 5 gallons, and barrels.

Note: The composition and superior properties and performance of SWP are more completely discussed in TEXT 4-SWP.

S-W MASTER PAINTERS' FLAT WHITE

Here is a reliable, prepared, low-price flat oil paint for plaster walls, ceilings and other interior surfaces; and IT IS WASHABLE.

S-W Master Painters' Flat White is especially well adapted to perform excellent service as an undercoater for enamels. It is popular with many master painters for this kind of work, though as a finish alone it produces a beautiful, durable and economical flat finish.

The composition of S-W Master Painters' Flat White is so balanced that it works easily under the brush and does not set up too quickly. Because of these excellent qualities it can be applied with a five or six-inch brush, saving time, labor and money. It dries to an excellent flat, solid finish with an appearance of depth. It is the solidity and depth which fit it so well as an undercoater.

The Market. Master painters, painting contractors, decorators, architects, engineers, public buildings, hotels, stores and office buildings.

Color. White only, but where tints and shades are desired the master painter obtains these by mixing S-W First Quality Colors in Oil with S-W Master Painters' Flat-White.

Sizes. 1 and 5 gallons and barrels.

Note: Our company manufactures several other flat wall finishes to meet special conditions and requirements of architects and decorators.

Undercoaters will be specially treated in Text on Enamels and Undercoaters.

S-W DECOTINT

S-W Decotint is a flat, decorative tinting coating for interior surfaces. It comes in dry powder form and needs only the addition of water (hot or cold) to make it ready for application. S-W Decotint therefore may be classified as Kalsomine.

It can be applied on plaster, wood, composition boards and other materials used in interior construction. It is used extensively on walls and ceilings where the high quality of Flat-Tone is not required.

When properly applied and dry S-W Decotint gives a soft, velvety, water-color effect. The complete effect is one of solidity and depth.

COMPOSITION OF KALSOMINE PAINTS. Formerly kalsomine was made by mixing white pigment (usually Whiting, gypsum or China clay) and glue and thinning very freely with water. Excess thinning with water accounts for the lack of depth and solidity of the early kalsomine coatings.

In the last quarter of a century kalsomine was given much attention, and there developed a formula which has brought kalsomine coatings into their own. Yet here as in paints and varnishes the formula may not be a guarantee that the finished product will be all that the formulas indicate; for in kalsomine as in all other coatings care in the selection and preparation of the raw materials, wide experience and brains are required. That explains why one manufacturer may produce a better kalsomine coating than another.

Toch, for instance, in his Chemistry and Technology of Paints, page 13-, in describing Whiting, the pigment commonly used in making kalsomine paints, says, "Whiting and natural calcium carbonate are pre-

pared from the natural chalk deposits of the cliffs in the south of England, and Paris White, Extra Gilder's White, and Spanish White are all different qualities of Whiting, depending upon the amount of levigation and fineness of grain. The mode of preparation is very simple. It consists in grinding the cliffstone in water, washing it, and allowing it to settle in large vats. The cream, or that which is nearest the surface, is dried over steam-pipes, bolted, and sold as Paris White. The next layers are sold under the name of Extra Gilder's White, and the bottom layer as Commercial White, of which putty is made. Whiting is a neutral calcium carbonate, and with the exception of the small percentage of water, which is very variable and depends upon how thoroughly it has been dried, it is remarkably pure and fine."

Yet this highest grade of Whiting of which Toch writes is still further improved by our company for use in S-W Decotint. Our pigment is put through a special, scientific cleaning process which gives it such purity and fineness that it can not further be improved. The super quality which our treatment gives to this pigment largely accounts for the clearness of color, depth and solidity of S-W Decotint. When dry and reduced to powder, it is mixed with the binder.

Too much binder will give gloss and we don't desire gloss in kalsomine coatings; too little binder will not hold it to the surface; too much water will cause a loss of depth and solidity in the beauty of the finish; too little water will cause the kalsomine to be so thick that it will be difficult to secure a smooth, even surface, and drying will take place too rapidly and cause the material to set-up so quickly that it can't be "worked" or "gone back into" with the brush. S-W Decotint is so made that it spreads on easily and smoothly and the interim of its setting up gives the painter ample time to go back into it and work it, leaving no brush marks or laps.

S-W Decotint contains no alkali, acid, or anything injurious to health.

Because we are so particular in the selection and preparation of the raw materials which go into S-W Decotint, and because of our facilities and our staff of men who through wide experience have come to KNOW how to make good kalsomine we believe S-W Decotint will continue to be the leader of kalsomine coatings.

Mixing and application. Add sufficient cold water (hot water if desired) to the dry powder to make an ordinary thick paste. Stir thoroughly so as to insure complete incorporation of vehicle and pigment; if any lumps form these should be broken up and smoothed out; next thin down with cold water to the consistency of oil paint or cream.

S-W Decotint is very easy to apply, being applied with a 5 or 6-inch brush. The tendency of water-color paints is to dry very quickly.

S-W Decotint does not require a Size or Sealer but many painters obtain extraordinary results with Decotint by priming the surface with a coat of S-W Flat-Tone Mixing Size. Such a treatment would bring out the clear tone of color, and prevent any possible "striking in" or fading due to the coating falling through beneath the surface.

A. Ashman Kelley, in his book "The Expert Calciminer," says that "the harder and smoother the surface, the better the result one can obtain with Calcimine." Yet the surface must not be so completely and impenetrably hard that it has no tooth. A good surface will have adequate tooth to permit the coating to "take hold."

To be sure of the best results, the air in the room should be dry and of moderate temperature. WHILE APPLYING S-W Decotint, close the windows and doors to avoid drafts.

AFTER APPLICATION open all windows and doors to allow free circulation of air and make a fire if necessary, as quick drying after application is essential to good work.

One coat gives a good finish but two coats will give greater solidity and depth to the appearance of the finish. The second coat is applied after the first coat has become dry.

Covering. From 60 to 100 square feet to a pound, according to the kind and condition of the surface.

The Market. All paint dealers, master painters, painting contractors, decorators, wallpaper stores, general merchandising and hardware stores and industrial plants.

Colors. These range from the lighter tints of gray, blue, pink, green, tan, etc., to the darker shades and tints.

Sizes. 5-lb. packages, 10-lb. kegs and barrels.

S-W FLATTING OIL

S-W Flatting Oil is a specially prepared oil which we manufacture for use by master painters and painting contractors who still use lead in their flat interior finishes.

It has excellent binding and wearing qualities, is uniform, and brings the paint to a beautiful flat finish.

It is mixed by the painter in the proportion of about 3 gallons to 100 lbs. of lead.

S-W Flatting Oil is packed in gallon pails, four gallons to the case.

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