Time-Tested SELLING

SECTION 1

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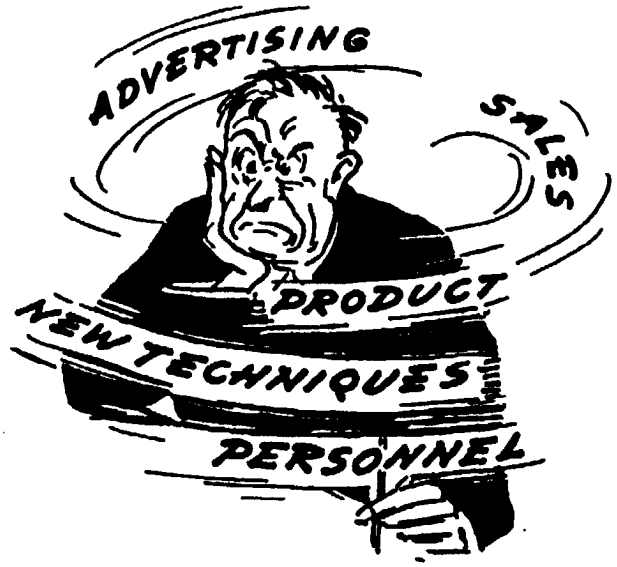


TO THE MEN WHO MUST KNOW PAINT AND HOW TO SELL IT

THE dealer is confronted today with increasingly complex problems of retail selling as well as those pertaining to modern merchandising and new materials.

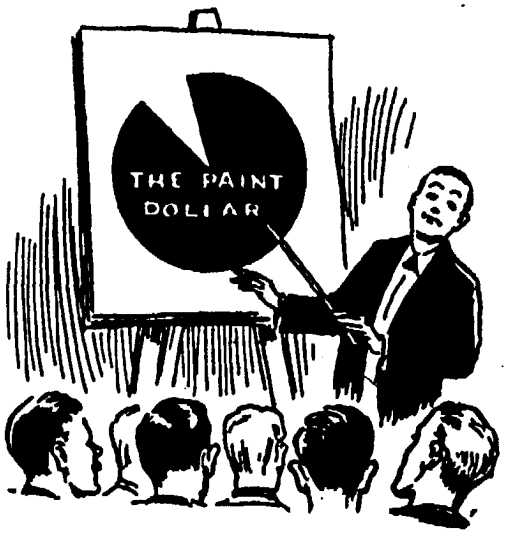
If the dealer is to succeed, he must keep up-to-date, especially adapting himself and his retail salesmen to the modern methods of retailing and selling in his particular field.

Many industries have written volumes on merchandising and selling in more or less stereotyped fashion, but none has ever been published relative to the retail paint dealer and his retail over-the-counter salesmen.

This course is, therefore, made especially for the retail paint dealer so that he may train himself and his salesmen in the fundamentals of selling in the paint industry. This will give each man a foundation upon which to build his own plan of action and personal technique.

While no one plan covers all the details of every problem in retail selling, we feel assured that we have in this top-flight Glidden Retail Sales Training Course the most modern tested and proved methods known today for successful paint selling.

Remember this—you as a dealer must advance—go forward; use this Sales Course with your sales people and get the most of the American Spendable Dollar for paint.



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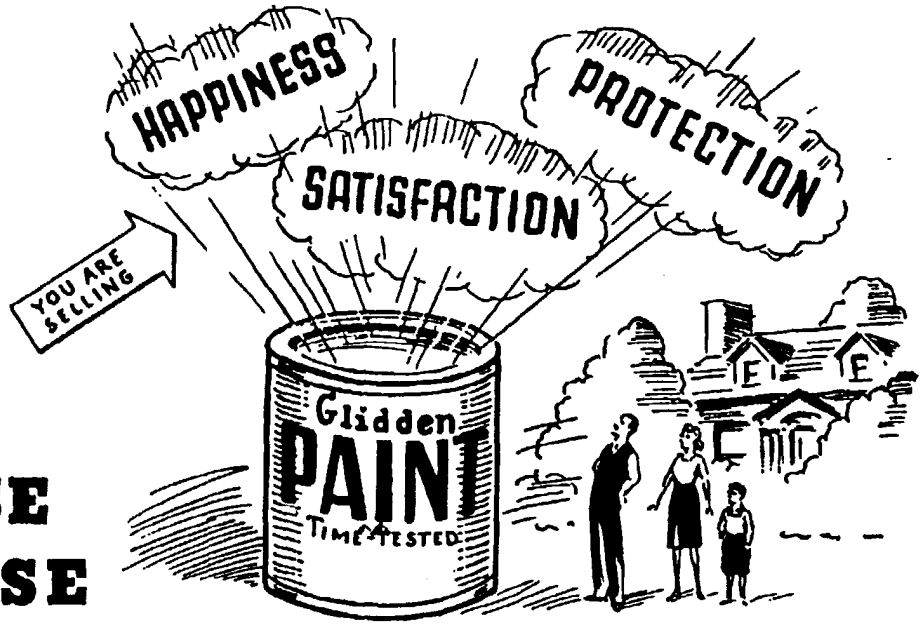


PURPOSE OF COURSE

THE Glidden Retail Sales Training Course is a plan which will make the dealer and his employees outstanding in the paint business in the community. There is no other business where more happiness, beauty, satisfaction, and protection of investment can be bought.

You Have the Answer

You have the opportunity to become the leading seller of paint, the authority on color and home decorative combinations. Since so much property protection, beauty and satisfaction, comes from a can of paint, the dealer will be the one to whom both men and women will come for the answer to their painting problems. You have a unique service not offered by other sellers of paint.

Special Training Essential

New types of decoration, new color schemes, new daring combinations are in continuous demand. Therefore, this special training for those in the painting and decorating trades is most essential. This teaching and this course should stimulate everyone who studies it, by bringing to the individual worthwhile training and mental discipline.

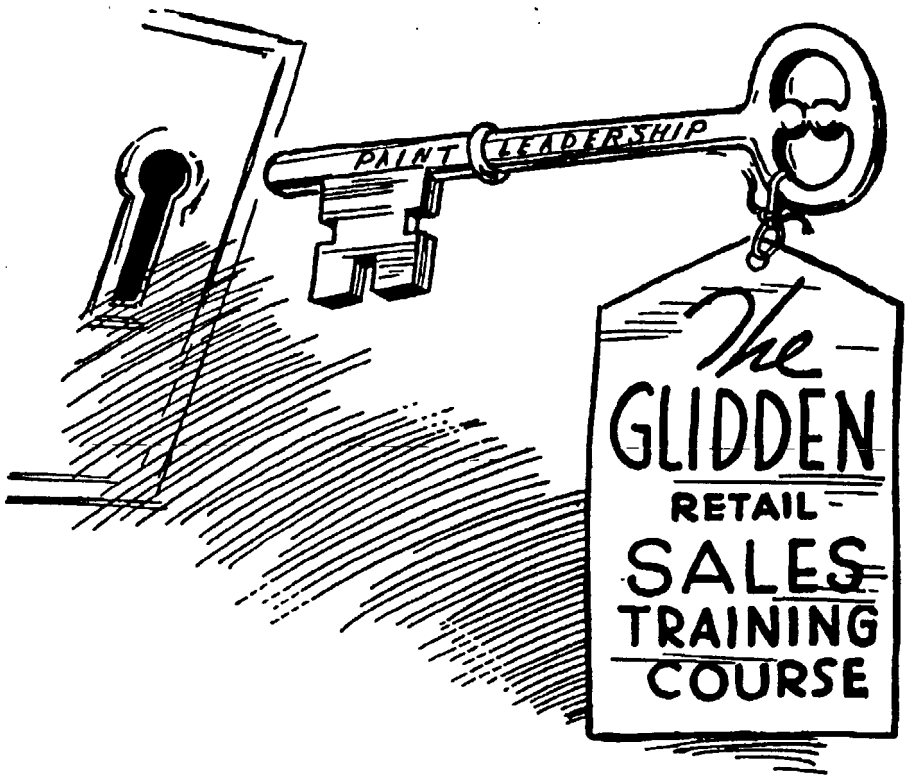
Next to the customer, the most important person in retailing is the retail salesman. Making a sale is THE most important thing you do. There are more than eight million people in the retail and wholesale trades. Retailing offers a great future to capable men and women who know how to make people WANT and to OWN more goods.

This great country of ours is

GLD 32141 A

geared to manufacture even greater quantities of consumer goods than we had dreamed of a few years back. The economy and prosperity of the nation rests with the efficiency of retail salesmen and saleswomen. If the manufactured goods are not moved by you to the consumer, then our national economy and financial structure slows down. You are an integral part of our national business structure. You and The Glidden Company accept this challenge and together we look forward to years of mutual prosperity.

This course should be the key that opens the lock for every Glidden Dealer in America. It will be useful to the owner, to the old salesman, as well as to the new salesman. It should be studied carefully and thoroughly. The facts are here. They will help tremendously in your becoming THE PAINT LEADER in your community.



Things you should know about

THE GLIDDEN COMPANY

Since 1883

THE size and variety of The Glidden Company's activities fascinate many customers. This brief history will help you to answer some of their questions.

The name is derived from Francis K. Glidden, who started a varnish business in Cleveland just after the close of the Civil War. In 1883 he took in his three sons and incorporated The Glidden Varnish Company with a capitalization of $100,000. From the outset considerable attention was given to laboratory and experimental work.

Japalac Introduced

Glidden first combined color with varnish to make a varnish stain, which was introduced in 1898 as Japalac. In 1903 the first four-color advertising to appear in any magazine carried the story of Japalac, a product destined to become a household word in every state of the Union. This was the beginning of the paint business as we know it today.

A new site was acquired in 1906, at the intersection of Madison Avenue and Berea Road, in Cleveland, Ohio, where a bigger and more modern plant was built. The discovery of how to successfully use China Wood Oil or Tung Oil enabled Glidden to be the first manufacturer to successfully make faster-drying, paler, harder, more durable, and more waterproof varnishes.

Demand Grows Rapidly

The Company at this point was growing by leaps and bounds, due somewhat to the then infant automobile industry. The automobile and furniture industries were consuming ever-increasing quantities of Glidden products. It was necessary to repeatedly add addi-

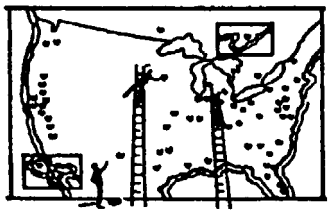
GLD 32142 A

tional facilities to the Cleveland factory until soon the entire sixteen acres were covered with buildings and storage tanks.

This progressive policy, coupled with the exacting attention paid to the establishment and the maintenance of highest quality standards, was responsible for the rapid expansion of facilities to take care of the increasing demands of new customers.

The Glidden Co. Founded

In 1917, The Glidden Company was founded and organized by Mr. Adrian D. Joyce and a group of associates. Within two years the assets and business of other manufacturers and distributors of paints, varnishes, dry colors, kal-

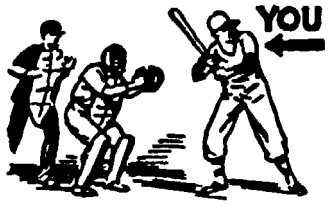


somines, and allied products were acquired together with the brands and goodwill. This gave the company manufacturing and distributing facilities, as well as warehouses, in the principal cities of the country.

From that time forward the company has grown in a spectacular manner. Glidden Distributors, Agents and Dealers sprang up everywhere and continued to grow with the Great Glidden Company. The acquisition and control of sources of raw materials accounts for part of this growth; the sheer soundness of Glidden management, advertising, and dealer merchandising policies, account for the balance. The fact that Glidden owns its own raw material plants permits the production of far superior products with much greater uniformity than other paint manufacturers.

A Smooth Functioning Team

It is the products, conceived by the technical staff, manufactured by the factory organization, sold



by the salesmen to the dealers, and by the dealers to the consumers, that constitute the real greatness of The Glidden Company. This greatness reflects team play, and that is exactly what it is; a well organized, smooth functioning, big team—you have a most important position on this team; together we overcome problems and continue on a successful course. Every hour in every day the man-power of the organization is working to create new and unusual products which will eventually require even greater physical facilities to manufacture and to market.

Synthetic resins and oils of new and unusual properties are being made in a complete synthetic resin plant. Alpha-protein, lecithin and a host of other products, developed in Glidden affiliated plants, are making new finishing materials possible that could not have been developed without the aid of the entire well-rounded organization.

Glidden Extends To New Fields

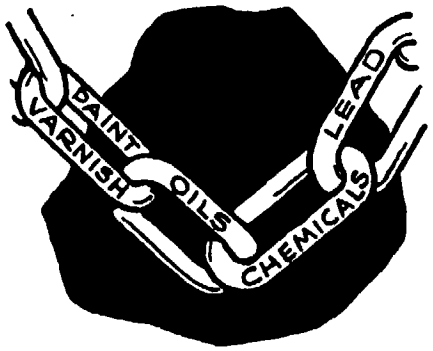
In addition to the original line of paints, varnishes and lacquers, the company branched out into the manufacture of

Durkee's Famous Dressing	Cadmium Colors
Dunham's Cocoanut	Euston White Lead
Worcestershire Sauce	Cuprous Oxide
Durkee's Margarine and Shortening	Waxes
Durkee's Spices	Polishes
"Alpha" Protein*	Peanut, Corn, and Palmoils
Lecithin	Linseed Oil
Soya Meal, Flour and Flakes	Cocoanut Oil
Poultry and Live Stock Feeds	Cottonseed Oil
Soybean Oil	Insecticides
Special ingredients for bakeries and confectioners.	Weed Killers
Paint Cleaners	Hormones
Inert Pigments	Powdered Iron, Copper, Lead and Tin
Titanium Dioxide	Type and Grid Metals
Lithopone	Tars and Resins
Red Lead and Litharge	Turpentine
	Solvents
	Synthetic Rubber Compounds
	Compounds for Plastics

*Trademark Registered

and a host of other related products for which Glidden is so widely and favorably known today.

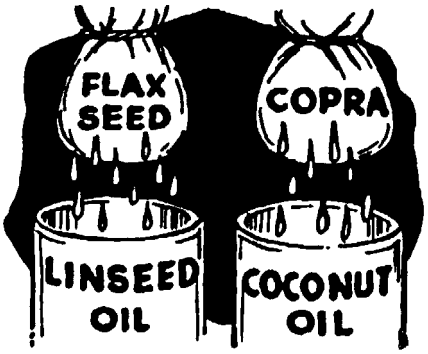
In the words of Mr. A. D. Joyce, President of the Glidden Organization, with regard to the business philosophy which led the company into these widely separated fields: "It was realized that there were certain of our raw materials which could be made at less cost and with more uniformity than they could be purchased. We saw that this would occupy plants and equipment which could, in turn, be utilized to make other products and tend to broaden the scope of our market and stabilize our manufacturing. It has been this policy which has led with surprising consistency, into such seemingly unrelated fields as paints and varnishes, foods, chemicals and lead. And still, when one examines the history of the company, it will be found that each step led logically to the next one; each product to its successor."



The story of how The Glidden Company happened to get into the food business illustrates the above statement. The crushing of flaxseed to make linseed oil is a seasonal business and kept the linseed oil mills busy only part of the year. Investigation showed

GLO 32143A

that the crushing of copra to make cocoanut oil would take up some of the slack. In looking for a market for cocoanut oil, it was logical to convert it into oleomargarine, soft butter, hard butter, and other



food products that had a ready sale to bakers, confectioners, restaurants, grocery stores, and similar consumers. It was only a step to add other related food products that could be sold in the same channels.

Customers Assured Adequate Supply

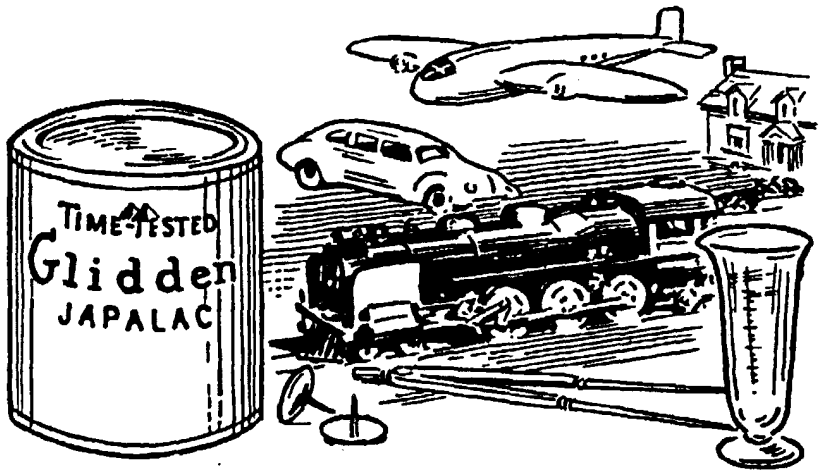
In addition to the economy motive, previously mentioned as a reason for entering the raw material field, it was realized early that it was important for the paint plants and their customers to always be assured of an adequate supply of important basic materials.

Not only does this diversification stabilize and round out the activities of the company by lessening the effect of a decline in a given single industry, but also the very wide field of endeavor necessitates the employment of the very best technical skill in specialized divisions of science. When a difficult problem is encountered many avenues of approach are provided through the various allied laboratories and a more vigorous attack can be made than if the entire technical staff had experience only with finishing materials. Thus are many new raw materials, processes, and methods of manufacture developed to the advantage of the paint and varnish division.

Centralized Control

All of this is made possible by the far-seeing, long-range planning of Mr. Joyce and his able family of executive helpers—each of which has devoted his entire life to his particular field of activity. Through this efficient executive organization these varied activities in so many different fields are directed from a central authority, so that all the divisions and sub-divisions work together with the regularity and precision of a clock.

The facilities of The Glidden Company are unequaled for the efficient production of all types of finishing materials, whether they be made from natural or synthetic raw materials; whether they be stain, filler, varnish, lacquer, paint, enamel or any other class of product; whether they be used for finishing the interior or exterior of the home, furniture,



woodwork, walls, airplanes, automobiles, locomotives or submarines; hairpins, leather belts or overshoes; thumb tacks, or aluminum signs; paper cups, tin cans, or zinc castings. Glidden gives the dealer all the benefits of testing, development and research of its 26 "Time Tested" laboratories, working day and night. These scientists, developers, research men, many of them holding Doctors Degrees, spend their entire lives working on materials, or combinations of materials, to improve the finished product. Besides the 26 "Time Tested" laboratories, the Paint Division of the company has 250 chemists and technical men, over 3,000 factory and production men, over 550 salesmen and sales managers, and more than 1200 office and warehouse workers.

Considering the scope of activity and the breadth of service of the company, our slogan "Everywhere on Everything" is a literal statement of fact.

Continuous Market Research

The Glidden Company maintains a continuous market research by employing professional

interviewers who travel throughout the country. The interviewers reach a very accurate cross section of property owners, balanced in the various income groups. The company determines just what the people want, what would attract them to paint, and what they expect the paint to do. This advance knowledge is given to our dealers and their salesmen, so that they can better serve the people in their communities and to know the needs of their buyers.

GLD 32144A

Things you should know about

PIGMENTS AND COLORS

WHY are Pigments and Colors important to know? Because they are one of the most important ingredients in the manufacture of paint products. They are just as important as the vehicles because they show in the finished film of the paint and have a marked effect on its properties, not only with regard to color, but in weather and moisture-resistance.

It is, therefore, imperative that the retail paint salesmen have a knowledge of pigments and colors which includes their basic purposes and good qualities.

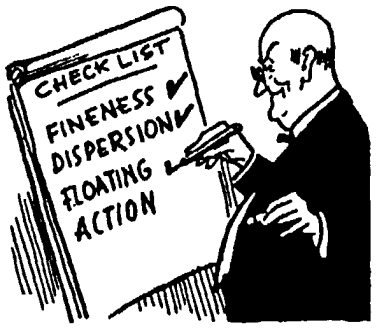
Base pigments are those which form the very foundation of body and color. Inerts, or extenders as some prefer to call them, are those which play very little or no part in imparting color to the finished product. They have very little covering power and are incorporated in paint for the various properties they impart.

Knowing how important Pigments and Colors are to paint products, developments are continually being carried on in the Glidden laboratories.

Pigments Continuously Tested

The Glidden Company spends much time and money in the development of the desired properties in pigments and in eliminating undesirable ones. These pigments are undergoing continuous tests on test panels and in test batches. Each sample submitted is carefully tested to meet all the requirements listed in our standard specifications. In the case of new pigments great care is exercised before their adoption to see that they have the properties which we desire.

Some of the properties tested for are: FINENESS - DISPERSABILITY - FLOATING AND SETTLING-DURABILITY-ACTION on drying (does it speed-up or slow down drying) EASE OF GRINDING - BLEEDING - EFFECT ON EXPOSED FILM (does it become brittle, check, chalk or crack), LIGHT FASTNESS (will it retain its original colors, darken or fade).



All of these tests and many more are continually being worked out by Glidden's highly-trained engineering and research staff whose ultimate goal is: — IMPROVEMENT OF PRODUCT.

The following pigments, extenders, and colors are the principle ones used in the paint industry:

Pigments	Basic Purpose or Good Qualities
White Lead	Opaque covering, desired chalking, good priming quality.
Zinc Oxide	Film hardening, color retention.
Lithopone	Dispersion properties, coverage, good hiding.
Titanium Dioxide	Very strong white, excellent covering and hiding, good mixing qualities with oil.

Colors	Basic Purpose or Good Qualities
Iron Blues	Very strong, deep rich colors, good permanency.
Prussian, Chinese Blue	Unaffected by heat and alkali semi-transparent and excellent light fastness.
Ultramarine Blue	

Colors	Basic Purpose or Good Qualities
Cobalt Blue	Exceptional light fastness.
Carbon Blacks Lampblack Gasblacks	Very stable and are unaffected by light and air, high tinting strength.
Bone Black	Unique tinting qualities, rich tone.
Raw Umber	Color retention and tinting qualities.
Burnt Umber	Color retention and tinting qualities.
Van Dyke Brown	Color retention and tinting qualities, used in fillers and stains.
Chrome Green	Color strength, mixing quality, richness of color.
Yellows	Clean, brilliant, fine dispersion and excellent adhesion in certain formulas.
Reds (Various)	Permanency, durability, covering power, some are good heat resistant colors.

Inerts or Extenders	Basic Purpose or Good Qualities
Surfex (Manufactured)	Holds out enamels and undercoats.
Whiting (Manufactured & Natural)	Does not lower gloss, has soft texture.
Magnesium Carbonate (Manufactured)	Aids suspension, and its flattening property; high transparency.
Barytes (Natural)	Unaffected by acids, alkali and indestructible by fire.
Asbestine (Natural)	Helps hold other pigments in suspension, helps flattening.
Silica (Natural)	Hard Texture, gives tooth to paint.
China Clay (Natural)	Flattening properties.

GLD 32145 A

Things you should know about the

MANUFACTURE *of White Lead*

THERE are several processes for making basic lead carbonate (white lead). We will give a short description of two processes because of their importance. One is an exclusive Glidden process, (The Euston Process) and the other, the old process, or slow method.

The Old Process or Slow Method

The lead is melted and cast into perforated disks called "buckles" about six inches in diameter, which are placed in porcelain pots containing, in small wells, about one pint of dilute acetic acid. They are placed in rooms holding several layers, or tiers of 600 to 1,000 pots each. The pots are covered with boards and layers of tanbark placed between each tier. The rooms, technically called "stacks", are kept closed. During a period of about 120 days the heat and the carbonic acid gas generated by fermentation of the tanbark, together with the acid vapors, combine to transform the lead, more or less completely, into a white flaky substance (basic lead carbonate or white lead). This substance must then be crushed, screened, floated, ground in water and dried before it is ready to be marketed as the White Lead that we use.

The Euston White Lead Process

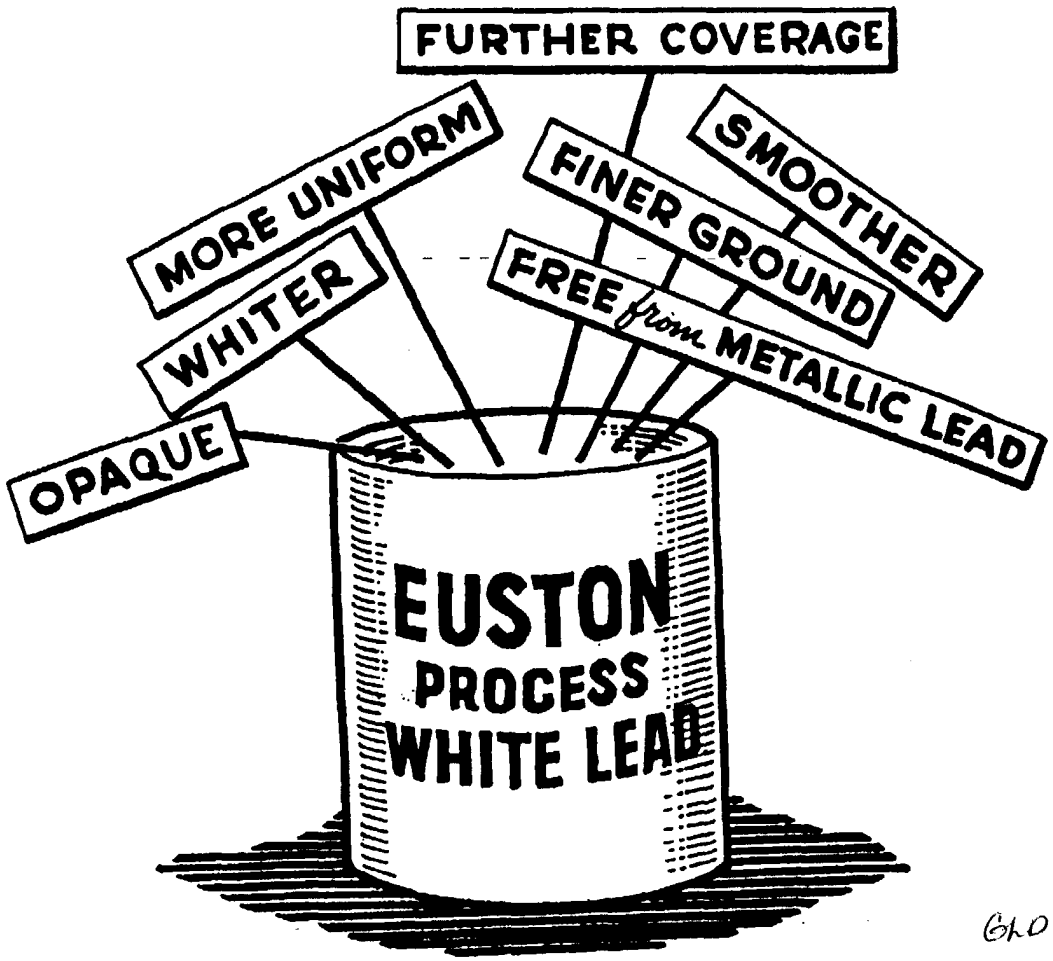
The patented Euston White Lead Process is used only by Glidden at our Euston Lead Plant. This principle, contrary to other methods, is based on the precept that white lead is not a compound but a mixture of basic lead carbonate. The Euston process is a

much faster method than the Old Dutch process and produces a purer, whiter product. The procedure is carried out in three steps:

1. Pass carbon dioxide into a basic lead acetate solution, stopping before the solution becomes acid in reaction. Thus the basic lead is formed.
2. Pass carbon dioxide into basic lead acetate solution stopping after the solution becomes acid in reaction. The normal lead carbonate is obtained.
3. Mixing of the above two in proper proportions results in a pure carbonate white lead.

The Euston Process gives a whiter lead, because only pure chemicals are used in manufacturing, a more uniform product, a finer, smoother product, free from metallic and sandy lead, and will stand more reduction because of the extra fineness. It mixes more quickly with oil and does not pull under the brush.

Euston White Lead is used in manufacturing Endurance House Paint, as nearly perfect a paint as it is possible to make. A finished product is as good as its component raw materials, and Euston White Lead is the finest lead manufactured today.



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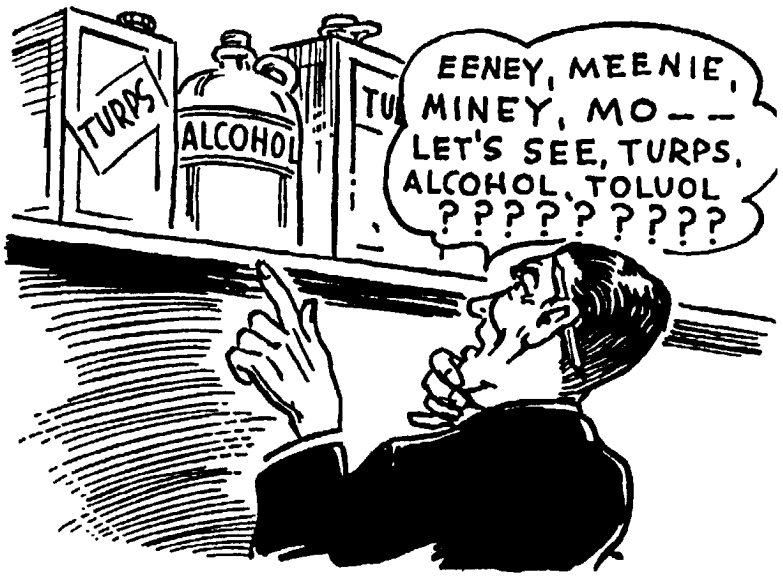


WHAT ARE SOLVENTS *and Thinners?*

WHAT are they? What is the purpose in using them in paints, enamels, varnishes and lacquers? Should considerable care be exercised in using them in regard to quantity and the various kinds? These are questions which the retail paint salesman should be able to answer.

Thinners are liquids which form clear solutions with the oils and resins used in paints, but evaporate rapidly, and almost completely. A few of the most popular thinners are turpentine, alcohol, mineral spirits, benzine, naphtha and toluol.

Source of Thinners

Gum Turpentine is distillate from the sap of several species of pine, the residual product being rosin. Wood turpentine is distilled from pine wood waste, stumps and roots.

Benzine and Naphtha are among the lighter distillates derived from petroleum. In practice these products are controlled as to boiling point, distillation range and specific gravity.

Mineral Spirits, quite widely used, are petroleum fractions of a higher boiling point, therefore evaporate more slowly.

Toluol is a product of coal tar, taken off at a certain point in the heat process.

Grain Alcohol (denatured) is processed from grains and is used to some extent in the paint industry.

These products are not in evidence as the final result of painting is achieved. Many of the very desirable qualities of paint products could not possibly be obtained without the aid of these important auxiliaries. Bear in mind that a particular solvent as received by us represents the finished product of some manufacturer, such as an oil refiner, or it may be the result of a long, expensive, and detailed research, involving years of work and the

expenditure of thousands of dollars to arrive at some product particularly applicable to our formulation.

The Purpose of Thinners

What is the purpose of using thinners? The primary function of solvents, or thinners, is to penetrate the surface so that the paint can get a bite, or foothold, into the surface on which it has been applied. Once the paint has bound itself to the surface, the thinner has served its purpose and is then free to evaporate. Thinners serve to flatten the film so that it will receive the next coat. We may then safely say that thinners serve a second important function, that is, to flatten the film of the prime coat. A third function of thinners is to give brushing and flowing qualities to paint that has been exposed in the open can resulting in some evaporation of the original thinner.

How Much Thinner?

Should care be exercised in the quantity of thinners used? A study made by the National Paint, Varnish and Lacquer Association showed that many companies appear to have little regard as to the amount of thinner recommended. Some ranged from none at all, up to one quart per gallon for the first coat, and from none at all to three pints for the second coat.

Excessive Thinning Will Create an Unbalanced Formula

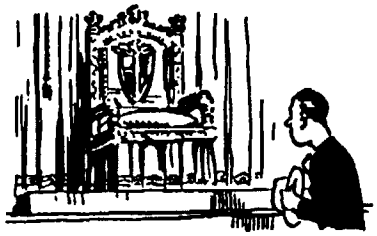
For general purposes, we strongly recommend that instructions on labels be followed. We might suggest that there could be an exception, in some cases, such as cold weather, when a little more thinner might be necessary to have desired penetration. Or, in the case of very porous wood, very little thinner need be added.

Thinners actually reduce the body of paints, enamels, varnishes, and lacquers. Therefore, excess thinning is to be avoided for the best results.

GLO 32147A

PAINTS . . .

SEVERAL hundred years ago on the Island of Crete, about five miles from the principal town of Candia, the abandoned city of Knossos stood. This city is mentioned in the Old Testament as one which paid tribute to Babylon. It evidently was partially



destroyed overnight, or at least abandoned overnight. Parts of it, when excavation work had been completed, were found to be 15 feet under the surface of the ground. For students of history and for science this was a good thing, as many earthen jars, still full of dried olive oil, the King's throne, his central temple, and his home, were all intact.

Original Paints Preserved

The amazing fact was that the original paints, in the throne room, in the banquet hall, in the Queen's bathroom (and there was a bath tub, on same general design as those we use today) were about 85% preserved. The design, the coloring, and the combinations of color were beautiful. They had used extensively, light blues, rose, vermilion and gold colors. The time was many, many years before Christ.

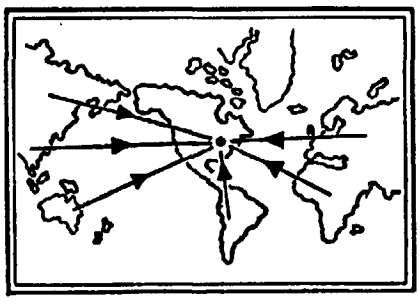
Even in history paints were made and used throughout the ancient world. Who discovered the original formula was not recorded by historians. The Egyptians, the Babylonians, then the Greeks and Romans were evidently the original users. It is true then, that down through the ages paint has influenced our daily lives.

Following this period of "pigment or paint culture," the science was dormant until it again burst forth to influence the arts, architecture and sculpture. Craftsmen began mixing their own colors, taking their secrets with them on leaving this earth. Oxide of

Iron and Ochres were added. Basically, however, the principles used in making colors and paints have not materially changed.

World Wide Sources

The materials now used come from the vegetable, animal and mineral kingdoms. Buried trees of ancient forests in Africa, the East Indies and New Zealand provide us with the all-important



varnish resins. Flax, from which linseed oil is pressed, comes from the United States, Canada, and from the Argentine. China Wood Oil or Tung Oil comes from China. In more recent years, we have made progress in growing the tung oil trees in our own deep South. The oil is extracted from nuts each having 3 to 5 kernels. They resemble Brazil Nuts or Chestnuts.

Shellac is produced in India from the lac bugs. Beeswax comes from bees, bone black from sheep bones.

The oil industry supplies us with mineral spirits, carbon and lampblacks. The pine trees in the Southeastern part of the United States furnish us with turpentine.

In this course we need not go into the technical side, or even into the many other products used in the manufacture of paints. The ones mentioned here are the essential, or foundation materials.

What Is Paint?

Paint is a mixture of dry powder, known as the pigment, a liquid, known as the vehicle, a thinner and a drier. Paint is a surface coating applied to many surfaces, in a thin film, for the purpose of protection, beauty, sanitation, identification and satisfaction.

There are perhaps 500,000 people employed in merchandising, applying, and manufacturing paints. Good products depend just as much on manufacturing skill as on formulation and raw materials. Glidden has developed 40,000 paint formulas, 18,000 lacquer formulas, and several thousand varnish formulas. Over 700 raw materials are used.

Exterior paints are pigments ground in Linseed Oil and are used on exterior surfaces, since the oil which binds the pigment to the surface is elastic. Because of this elasticity the paint will conform to the natural expansion and contraction of the large surface over which it is applied.

Purpose Of Pigments

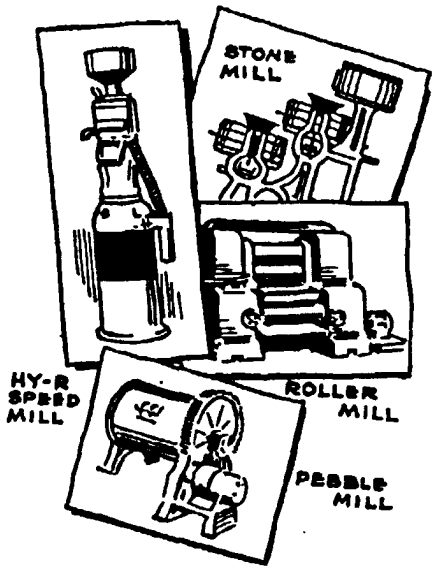
A pigment is an opaque, or semi-opaque substance which is insoluble, (will not dissolve), in

the binding vehicle. The pigment is the foundation for the color. The search for new and improved pigments is a relentless effort by our laboratories. These pigments appear in the finished paint film. They have a marked effect on its properties, not only in regard to color, but also in weather resistance, moisture resistance, and wearing qualities.

Standard tests are set up which make it necessary that pigments meet rigid specifications. They are studied under the subject of "Pigments and Colors." It is of interest here to mention that some pigments must meet a 325 mesh sieve test, while others must meet even more rigid standards. They must pass the strength test which tells of their durability, coverage qualities, and quantity necessary to give the desired depth of color. Another important test is that of the pigment's oil absorption properties. By means of this test we can determine the amount of oil necessary in making a heavy paste, and it also is a guide to the body obtained in finished goods. Body is spoken of as that property which makes paint appear as though it had substance. It is the proper proportion of pigment and oil to produce a full-looking coating when applied on a surface.

Paints are ground on Roller Mills, Stone Mills, Ball Mills, in Pebble Mills and Hy-R-Speed Mills.

If we were to hand-mix a pigment with a thinner only, (without any linseed oil) the preparation would not bind to the surface. The thinner would evaporate quickly and dry powdered pigment would remain. This would quickly rub



and blow off and would not be visible in a short time. If we mixed a pigment with only linseed oil, the preparation would have no penetrating qualities, due to the absence of solvents or thinners. The pigment must be ground into the oil and be properly cushioned with it, and this would not result if the two were merely mixed together.

Glidden's tested manufacturing methods assure you of a balanced and proper formula for every purpose.

A Two-Coat System

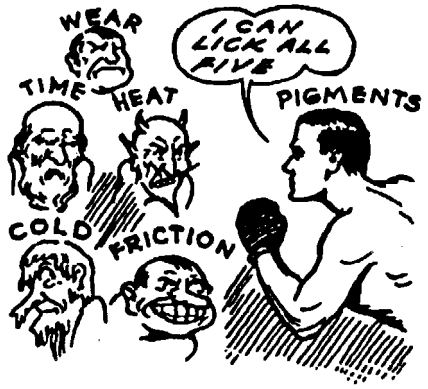
Before the idea of painting houses with a two-coat system became popular, many paint men used only white lead, turpentine,

linseed oil, and drier. The prime coat was the same mixture, with additional thinner added. The differences in batches, and the absence of sealing properties, caused many serious failures.

Glidden's development of Basecoat and Endurance Prepared Paint made available a superlative two-coat system. The problem was to formulate a primer which would penetrate, seal, have tight adhesion, and yet hide the wood. After long study and experiment, Basecoat was developed—a perfect house paint primer. It possesses exceptional adhesive qualities, penetrating deeply into the wood. It retains its elasticity, expanding and contracting with the surface to which it is applied. Its unique qualities prevent the blistering and peeling caused by moisture and temperature changes. Its hiding and sealing power makes good two-coat painting possible.

White Lead Plus Zinc Oxide Plus Titanium

In striving to make a perfect finish coat, Glidden chemists found that certain built-in features must be added. They used White Lead as the base, added Zinc Oxide for hardness, and Titanium for whiteness opacity and color retention. Added to this combination were certain other qualities such as: added tooth, ability to hold other pigments in suspension, control of flash, etc. By experimenting and testing constantly, a formula was produced that is so balanced that today we have the best that paint chemists and engineers can prepare.



Each raw material used in a paint product is included for a specific purpose. These pigments when put together, form a team to battle time, heat, cold, friction and the weather. They are always on the job, at work for the user.

Linseed Oil, made from Flaxseed, is the outstanding oil for use in paints today. It has the remarkable property of absorbing oxygen from the air, converting the film to a firm coating which is resistant to weather. It is a "drying oil", and is the vehicle that surrounds the pigment particles and evenly disperses them over the surface. It imparts a luster to the film, and at the same time binds it to the surface.

Film Must Be Thick Enough To Cover

One important step in the use of paint should be mentioned here. We are mindful of this feature and it should be passed

on to you since there is a general misunderstanding relative to film thickness.

Some of your competitors may claim that their house paint will cover 500 square feet per gallon, two coats. It might very well be that it can be brushed out so thin as to approach this claim. You must remember, however, that a customer buys protection, too—it is fully as important as hiding. When the film is too thin, protection is lost, as the film will fail in a relatively short time.

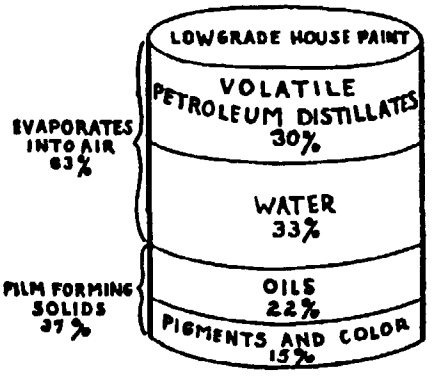
It has been established by the industry that a good durable house paint should have a film thickness of 4/1,000 of an inch. When you recommend that Endurance Prepared Paint be spread at the rate of 360 sq. ft. per gallon, two coats, you know that it produces a film thickness of 4.5 thousandths; this is ideal for protection and durability. The chart below portrays the film which results when the rate of coverage is known.

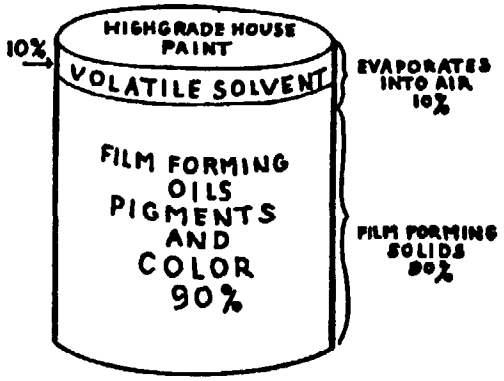
When you hear of a paint which claims a coverage of 550 square feet per gallon in two coat work you know that the final result is a film of 1.45 thousandths for each coat, or a total of 2.9 thousandths for the complete job; this will prove to be most unsatisfactory.

Rate at Which Paint is Applied in Square Feet Per Gallon	Thickness of Film in Thousandths of an Inch
200	8.
250	6.4
300	5.3
350	4.6
400	4.
450	3.6
500	3.2
550	2.9
600	2.7

Cheap Paint Competition

You will encounter competition which will advertise prepared paint at a ridiculously low price. However, it is the most expensive paint to use. It costs the same amount for labor in applying it, but the life and protection, which the customer gets, are absent.





As shown in the chart, when a cheap house paint is made, the manufacturer uses large quantities of water and petroleum distillates. Both of them rapidly evaporate and thus do not contribute anything to a durable film. The film soon cracks and splits, thus the repainting of the surface is made more difficult. Such low grade paints have very poor hiding power, poor color value, and usually fade rapidly.

In the case of a high grade paint where the proper proportion of high grade oils and pigments are used, a durable film of long life is produced. The film-forming oils surround each particle of pigment, forming a liquid envelope which can be brushed or sprayed over the surface. This protective envelope hinders the weather and moisture from getting at the pigment, and as long as the envelope remains whole, the surface appears glossy. When it wears through, the surface begins to chalk. A certain amount of chalking is desirable; it keeps the surface clean, and leaves a good surface for repainting.

Don't forget—the greatest expense of any painting job is not the price of the paint, but the cost of application. When low grade paint is used, the work must be repainted frequently, causing additional material and labor cost.

Glidden paints are made from quality materials, and in accordance with rigid tests. They will give your customers unexcelled permanence, durability, and beauty.

ENDURANCE IMPERIAL HOUSE PAINT

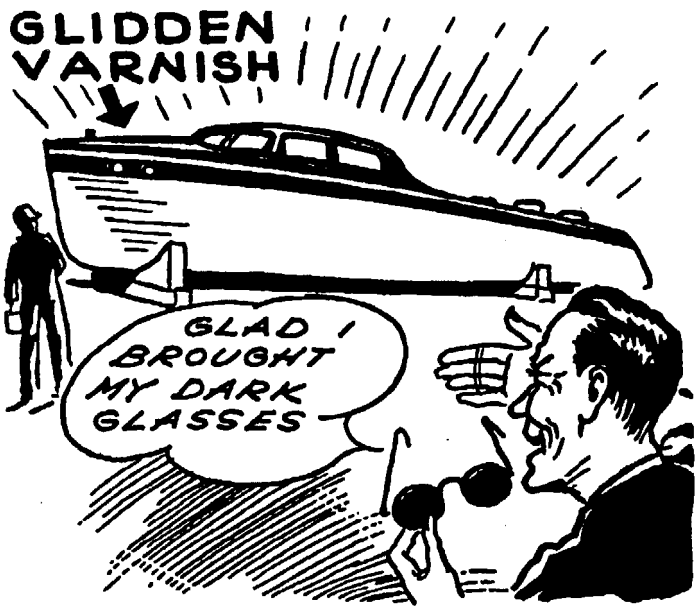
Endurance Imperial House Paint is an exceptionally high grade finish for exterior surfaces. It is formulated from the highest grade materials available and it has the depth and richness of White Enamel in appearance.

The vehicle is composed of the new Synthetic Alkyd Resins and Refined Oils which provide easy brushing and good weathering qualities. The Alkyd vehicle and a pigment combination of Titanium, Zinc and Lead, produce a high hiding film with controlled chalking. When the surface is in the proper painting condition, one coat painting is possible. A single coat of this superior formulation will withstand the constant attack of the elements, maintaining its original serviceability for long periods.

Endurance Imperial House Paint comes in White only. It is a self-cleaning or chalking material and therefore should not be tinted. However, the self-cleaning properties are well controlled, with the chalking cycle beginning 12 to 18 months after application and continuing mildly, maintaining a beautiful, white surface.

It is packaged ready to use and has an excellent spreading rate of 550 square feet per gallon on the average surface.

GLD 32150 A



VARNISHES . . .

MOST any coating of an oily or resinous nature that dries hard, might be called a varnish, if it is TRANSPARENT. The emphasis is on two properties: HARDNESS, which differentiates varnishes from oils; and TRANSPARENCY, which distinguishes varnishes from enamel.

For the protection of wooden surfaces, and at the same time increasing the beauty of the wood grain, there is nothing that surpasses varnish. For eighty years varnishes have been made by The Glidden Company—fine quality varnishes that are noted for their durability and protective qualities.

Gliddenspar Developed

The uses of varnishes are varied. Tables, floors, woodwork, boats, desks, beds, dressers, doors, porch ceilings, chairs; these are only a few places where varnish is used. Naturally, it is better to engineer different formulas to meet the needs of the different requirements. For instance, a varnish to be used on front doors, or porch furniture, must be elastic. Expansion and contraction, due to weather conditions, takes place, and if the varnish were brittle and would not "give", then trouble would result. To meet this need for an elastic product, Gliddenspar was developed. When a surface is exposed to water, rapid changes of temperature, and direct rays of the sun, Gliddenspar will fully protect it. On boats and pleasure craft, this varnish has proven by test that it will outwear and outserve any similar spar varnish and will maintain a high gloss under the most trying weather conditions. It can be used on all surfaces, inside or outside.

Floorette Varnish

Floorette Varnish is made especially for use on floors, the surface which is subject to the most abuse and hard wear of any in the home. It is not as elastic as Gliddenspar, but is designed to meet a different problem. Floorette dries with a very hard and tough film. It will not scratch white, heavy furniture will not harm it, heel prints will not disfigure it, water will not turn it white, and it has a film that will not chip or break from heavy pounding. A properly made floor varnish must dry fast enough to avoid inconvenience. This quality, also, is built into Floorette, and it dries to walk on in 8 to 12 hours.

Varnishes Meet Conditions

Since certain paints are made to give certain results under specific conditions, likewise different varnishes are made to give certain results under different conditions. That is why Bar and Table Top finish is included in our line (in addition to Gliddenspar, Floorette and Wearette). This material has been subjected to boiling water tests for hours, with no noticeable effect on its film or its gloss. Alcohol will in no way affect it; its high-solids and long-oil-content make it an unusually durable and wear-resisting varnish. There is also the General Utility varnish, where an economical and dependable piece of goods is desired. Cabinet Polishing Varnish is a rubbing and polishing varnish of the very highest grade. It is designed to produce a richness and depth of gloss that is comparable to the finish on the very finest of pianos.

Varnish Ingredients

Some of the oils used in the varnish manufacturing process can be cooked to a point where they are more or less heavy bodied, but they will not dry. Liquid driers can be added to speed up the drying. Driers are the salts of certain metals, such as Cobalt, Lead, Iron or Manganese, which speed up the oxidation of drying and semi-drying oils. They merely promote the absorption of oxygen, and are, of course, used in many paint products. The oils, because of the addition of driers, will now dry faster, but not as hard as is desired. The use of a resin gives us the necessary hardness.

Resins are of an organic nature and require experience in manufacturing in order to achieve the correct cooking temperature for best results. Otherwise they will char, darken, and finally burn.

GLD 32151 A

Resins give gloss, adhesion and hardness to the varnish film. Natural resins are exudations of trees; some having been buried for thousands of years are called Fossil resins. Synthetic resins, of which there are an increasing number, are manufactured.

Combining Ingredients

Therefore, we now have the oils cooked, the driers added and the resins added. Solvent or thinner is next added at the proper time

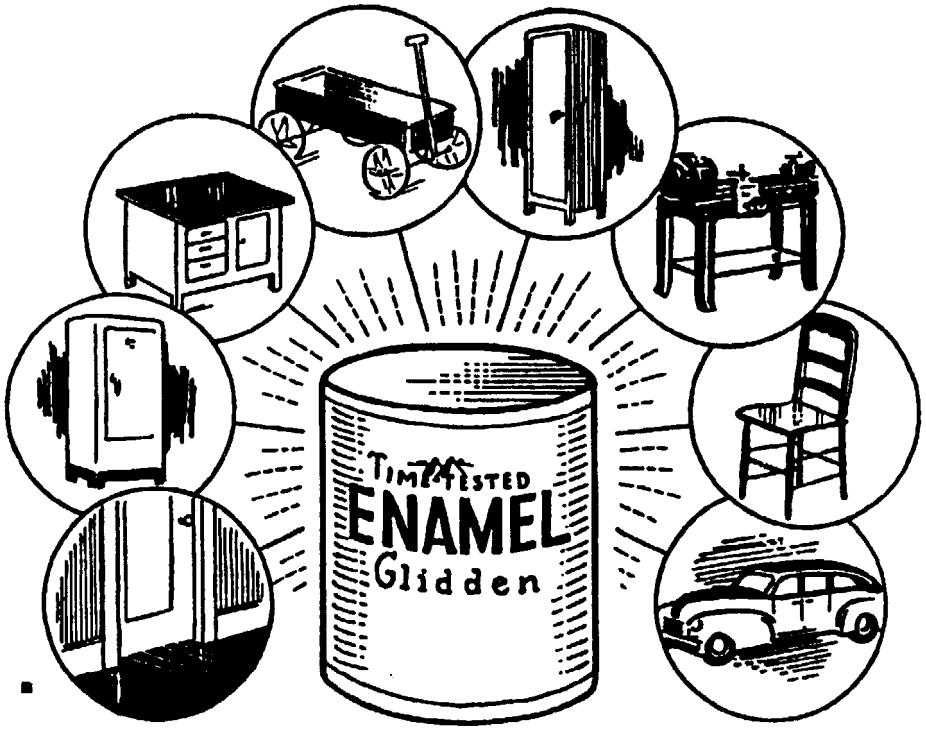
to make the heavy, molasses-like mixture of oil, drier and resin workable. There are various common natural resins used in varnishes, lacquers and enamels. Each one is used in certain materials and for certain reasons. Some of the more commonly known natural resins are: Congo, Damar, Kauri, East India, and Manila. Congo, for example, is an extremely hard fossil resin, dug or mined, mostly in the Belgian Congo. It requires cooking at around 670 deg. (f) to sufficiently melt it in order to make a long wearing and extremely tough varnish.

You will overhear painters talking about long oil and short oil varnishes. Here is what the term means:

When an extremely hard varnish is desired, a small amount of oil is added to the resin—this is a short oil varnish. When a consirable number of gallons of oil is added to the resin, we have a so-called long oil varnish, and such a finish would have great elasticity, since the hard brittle resin would then make up a lesser percentage of the total mixture.

The various varnishes, then, are made to perform in a certain way under certain conditions, just as are paints. They are never made by Glidden on any hit or miss basis. The best that workmanship, experience, and research, can produce, is in the can.

ENAMELS . . .



ENAMELS are used for many purposes and must be formulated to meet rigid requirements. They are used extensively in the home where they must hold up under many adverse conditions. We are, therefore, continually striving to make better enamels. They are used in the manufacturing industry on many different articles, such as toys, cabinets, refrigerators, automobiles, stoves, furniture, machinery of all kinds, tools and equipment, etc.

What Is Enamel?

Enamels can be made to air dry or bake to a smooth, hard, protective film. The luster of the resulting film may be a gloss, semi-gloss or flat. What, then, is enamel?

Enamel is refined paint. The oils and resins are especially treated and put through a process of refinement. The films must be tough, hard, and dry, in order to take the knocks, the washing, scuffing, and general rough treatment to which they are subjected. They are ground on Stone, Pebble or Roller Mills, and are given special care in handling and grinding. When a flexible film is desired, a long oil varnish is used to allow for expansion and contraction. Enamels are influenced in color by the varnish, pigments, and driers used. Time and temperature of the "Cook" of the oil and varnish also influence both the initial color and color retention properties. Improved lithopones, titanox, titanated lithopones, and titanium oxide are used to improve color and hiding of the finished product.

We can say, then, that enamels contain the finest pigments obtainable, ground fine, and combined with especially treated oils, resins, thinners and driers.

GLD 32152 A

Oil Processed and Purified

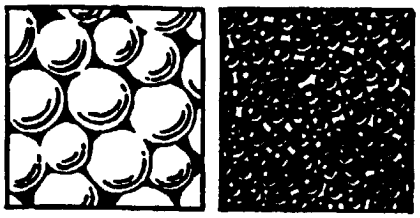
Raw oils are not used in enamels as they are in paints; they are processed and treated. This is necessary in order to make the film dry hard. The use of refined oils brings up another point on which paints and enamels differ and that is in the working qualities of each. On dipping a brush in paint and applying it to a surface, it is noted that the brush slides along through the paint and little effort is required to obtain a uniform film. Enamels, on the other hand, have a certain amount of pull or stickiness, on account of the treated vehicle, and more effort is required to obtain a uniform film. Enamel pigments are of the harder drying types for which reason zinc predominates.

Titanium is also used because of its opacity, its extreme whiteness and its good color retention value.

Pigments give protection to the vehicle and help in maintaining the luster as long as possible. Enamel films are kept thinner, and we avoid building up a heavy layer which would crack or chip. The pigment volume ratio is much less in enamels than in exterior paints.

Binding Medium Holds Pigments

The binding medium of bodied oils and varnish, serve to hold the particles of pigment together. One reason why the pigment in enamels must be finely ground can be understood by spreading marbles, ½" in diameter, over a square foot surface until it is completely covered. If we take ordinary BB



shot and spread them out over the same surface, you can see how much better and more completely the surface will be covered. That is the difference between coarsely ground and finely ground pigment when it is spread on a surface.

Resins do not oxidize like oils. A deposit is left on the surface, and unless the enamel is properly formulated, the resin deposit, because of its brittleness, will chip off and powder.

High Grade Enamels

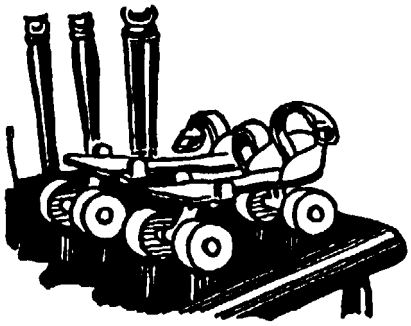
Enamels for home use must be stable, have minimum settling, work easily and dry at all times under average conditions. They are designed for specific purposes. Furniture, for instance, requires hard drying enamel, one which will not show print or marks. A longer oil enamel is more satisfactory on walls and trim. High-grade enamels for either exterior or interior use require that the major portion of the pigment be zinc and the great-

er part of the vehicle be treated oil.

Industrial enamels are, of course, different and will not be discussed here, primarily, because each enamel is a tailor-made product to do certain things under certain conditions. These enamels are usually baked rather than air dried. A material designed for high bake does not air dry. If it did, it very likely would wrinkle on high bake. Brushing enamels may be sprayed but not in a production way. The solvents are too slow and the enamel would sag unless extreme care were taken. The reverse is also true—spraying enamels do not make good brushing enamels because they "set" too rapidly.

Enamels Must Stand Hard Knocks

What then must enamels do? They must not sag, they must flow



evenly and smoothly. They must stand washing, knocks, scuffing and abrasion; but must not chip. They must dry with a hard film, have good hiding, be elastic, hold color and have a thin film so that succeeding coats will not build up. They must not be spongy with a thick film, as this would cause them to crack.

We illustrated in the placing of marbles and BB shot on a surface to show what a difference the grind of pigment means. With the best binder and pigment combination, a very thin film of enamel is all that is necessary to achieve perfect jobs, because we would have extremely good covering and hiding. The pigment will lay smoothly and evenly along the

painted surface. Cleaning the surface is easy. The surface is always in good shape to receive succeeding coats. The blending of the oils, the resins, the varnish, and the pigment in "Time-Tested" formulas gives the satisfactory service so essential in enamels.

Glidden enamels have been engineered in accordance with these principles. Glidden enamels are made to give depth of luster and permanent brilliance unparalled by other enamels in the industry.

Emulsion Paints

Recent years have shown that Emulsion paints have become an increasingly important factor in the Surface Coating Industry. Millions of gallons of the older, original types have been sold. Today the sales of newer types are surpassing all conceivable expectations, sweeping the interior coating market. Research in even newer types for exterior application is progressing at a remarkable rate.

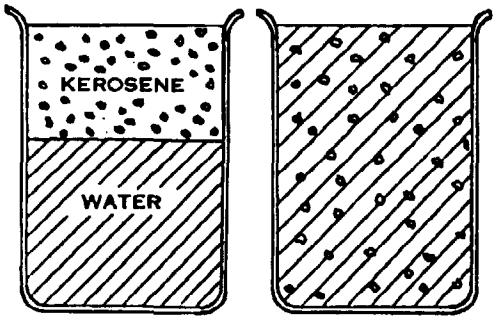
This important, ever-growing field requires a thorough understanding of Emulsion Paint principles and types if those of us engaged in various phases of the paint industry are to take advantage of the tremendous sales potential these paints offer.

What is an Emulsion?

An emulsion is a stable dispersion of two liquids that do not ordinarily mix, such as water and oil. There are two categories, oil-in-water types, and water-in-oil types. Milk may be thought of as an oil-in-water emulsion because the butter fat is finely dispersed in a watery medium. Butter is a water-in-oil emulsion because it consists of a small amount of water finely dispersed in butter fat. Oil-in-water emulsions may be thinned with water, and it is this type with which we are concerned in studying Emulsion Paints. Water-in-oil emulsions require an oil solvent.

Two liquids not capable of being easily mixed or mingled may be dispersed or emulsified by sufficient agitation, but they tend to separate almost immediately after agitation stops. Emulsifying agents such as special soaps are added to surround the oil particles, preventing separation from the water phase. (See figures.)

THE ACTION OF SOAP AS AN EMULSIFYING AGENT



WITHOUT SOAP THE MIXTURE SEPARATES

WITH SOAP KEROSENE REMAINS DISPERSED

The water part of the emulsion is thickened to good painting consistency by adding stabilizers such as caseins or soya proteins. These, and other materials contribute to keeping the oil particles dispersed, help prevent settling in the can, and provide good "creamy" consistencies.

What are Emulsion Paints?

Emulsion Paints in the broad sense are pigmented emulsions, the vehicles of which may consist of oils, resins, latex solids or other binders which have been emulsified.

Many of the materials used in

oil paints are satisfactory for Emulsion Paints, with the exception of those that are not compatible with emulsifying agents. The general composition is as follows: hiding pigments, extender pigments, drying oils, oleoresinous materials, emulsifying agents, preservatives, anti-foam agents, driers, solvents, and water. (See figure.)

The hiding pigments include titanium, zinc sulfide, and lithopone, preferably of the water dispersable type. Many of the regular extender pigments are used, largely silica for brightness, and water ground mica to improve brushing characteristics, flow, and leveling. Greater care is taken in choosing coloring pigments, eliminating those that are overly sensitive to the alkalinity of the emulsion.

It is possible to emulsify any type of oil or resin, so these selections are unlimited. Some of the oils and resins used are: water dispersable linseed oil, linseed varnish, and varnishes containing either the natural or synthetic resins of the various ester gums.

The emulsifying agents and stabilizers were explained in the discussion of emulsions.

Preservatives are used to prevent decomposition of any proteins which may be used and to eliminate fungus growth in partly filled containers or on the final dried film.

Anti-foaming agents are used to reduce the large quantity of foam that originates from the considerable agitation necessary in manufacturing, and to eliminate air bubbles produced when the material is brushed onto the surface.

Metallic driers are necessary in Emulsion Paints which contain oxidizable oils or resins. Any of the driers used in the paint industry are satisfactory and they are used in approximately the same ratio as in oil paints.

The principal volatile material in Emulsion Paints is water. However, emulsifying agents, driers, solvents, and anti-foam agents in part contribute volatile matter.

Methods of Manufacturing

Emulsion Paints have been described in the broad sense as being pigmented emulsions. Therefore, the manufacture of an emulsion consists of breaking up the oil parts into extremely fine particles, coating them with the emulsifying agent, and dispersing them in the water. The mechanical mixing may be done with several types of mixers.

Generally, the two phases, oil and water, are prepared separately, then mixed for emulsification. The necessary oils, resins, varnishes, driers, etc., for the oil phase are prepared and mixed in any type of standard mixer. The water phase contains the stabilizer, emulsifying agent, preser-

vative, and anti-foam agents. One method of emulsifying the water phase is to cook the materials in a special agitator tank equipped for heating and cooling, adding ingredients at various process stages.

The oil and water phases are then mixed in a suitable mixer and sometimes run through a mill to uniform the particle size. The emulsion is then complete, with only the pigments to be added to gain the finished product.

Some Emulsion Paints, particularly the later type, require the pigments be ground into a paste on an ordinary oil paint mill before being incorporated with the emulsion.

The foregoing represents only the general procedure for making Emulsion Paints, and is varied considerably to suit special requirements.

The Characteristics and Performance of Emulsion Paints

Interior Emulsion Paints are offered for use as coatings for newly applied plaster, wallboard, and wallpaper as well. The properties of these paints include fast and easy brushing, speedy drying, one coat covering on most surfaces with a second coat possible within a few hours if it is required, absence of solvent odor, and fair washability. They act as sealers over porous surfaces and may be painted over with oil paints. Products of the latex emulsion type offer the paint market's easiest brushing and washability to the degree that they may be constantly scrubbed.

Many Emulsion Paints are packaged in a paste form and are thinned with half a gallon of water to a gallon of paste. Some water thinned paints are supplied in dry powder form, but they are not Emulsion Paints. The paste types were the most popular, giving the buyer the advantage of increased paint volume when the water is added, but with the high cost of labor today, the ready mixed paints are more economical, eliminating the time spent pre-mixing.

Emulsion Paints began as flat finishes such as Glidden Spred Flat, but more recently gloss products such as Glidden Spred Luster have been developed. These are oleoresinous emulsions packaged in paste form.

During the last five years your Glidden Company has startled the paint industry and the paint world by developing latex Emulsion Paints of unsurpassed quality in the field, using 100% latex emulsion bases, and packaged in ready-to-use form. The first latex Emulsion Paint, Spred Satin, is of low sheen close to a flat. Spred Gloss, Glidden's most recent remarkable development, is the world's first latex Emulsion Enamel. These excellent products will be discussed in detail in the following paragraphs.

Historical Background of Water-Thinned Paints

Emulsion Paints are of the oil-in-water type emulsion and, therefore, they may be thinned with water. However, they should not be confused with common water paints which are pigmented solutions of glue, casein, or other water soluble binders. Emulsion Paints are the result of attempts to improve the film properties of water paints by the addition of oils, resins, and organic vehicles especially designed for this purpose.

Whitewash

Whitewash, which is merely slaked lime and water, is the grandad of all water paints. It is still used considerably on masonry surfaces because it is cheap. It has very poor durability.

Calcimine

Calcimine paint was the first real improvement over whitewash. A simple, inexpensive formulation of whiting, or chalk, with glue as a binder, it produces a good hiding flat finish that can be tinted and it dries quickly. However, it is necessary to remove calcimine before repainting with water-thinned paints, and only recently have oil based materials been developed that will recoat calcimine with limited success.

Casein

Casein paint patents date as early as 1865, with major developments occurring between 1924 and 1927. A form of casein paints is one of the oldest types of coatings, made in the days of the Roman Empire by blending earth pigments with skim milk. Our colonial ancesters sometimes painted their houses with a coating which included such ingredients as skimmed milk, salt, boiled rice, coffee, and egg white!

Casein is a protein substance derived from milk curds and has long been used as a vehicle or binder in water-thinned paints. A material closely related to casein is alpha-protein, which is extracted from the soybean. Glidden's Reflectolite is of this type.

Casein binders and hiding pigments similar to those used in Emulsion Paints provide a coating that has limited insolubility in water after reasonable aging of the dried coating. The performance of casein paint is similar to Emulsion Paints although the general durability is not as good.

Emulsion Paints are very similar to casein paints, the dividing line being the fact that casein paints use casein as the major film binder, and Emulsion Paints use lesser amounts of casein and only as the stabilizer in the emulsion. The gradual transition from fortified casein paints to oleoresinous Emulsion Paints took place between 1928 and 1940.

Spred Satin Latex Emulsion Paint

In May of 1949 a new type of emulsion paint was introduced to the public by The Glidden Company. It is called Spred Satin and it uses a synthetic rubber latex base as the vehicle. Spred Satin is an outgrowth of the Resin Emulsion Paints introduced at the beginning of World War II, which were, in turn, an outgrowth of the old Casein Paste Paints.

The chemical and water resistance of rubber and the toughness and wear resistance of rubber give all the durability characteristics which the public has long wanted, along with those advantages of Resin Emulsion Paints such as ease of application, good sealing, lack of objectionable odor, and quick dry.

Rubber Emulsion Paints offer several other advantages in addition to those mentioned. The dried vehicle is highly resistant to the action of hot lime in plaster and the high alkalinity of concrete. The unusual sealing qualities of these paints permits various Fiber Boards to be finished in two coats instead of the previous three or four of oil paint.

As a result, Latex Emulsion Vehicles have given the paint world Spred Satin, the 100% Latex Paint for walls, ceilings, and woodwork. For the first time the public has a ready-mixed, low sheen paint with durability to the point that it may be guaranteed washable. Spred Satin has incomparable ease of brushing, cutting painting time in half. It may be applied with a roller, leaving no laps or marks. It may be sprayed. It dries in approximately 20 minutes, and once dry, may be touched up with no ill effects.

Spred Satin can be washed continually without loss of color, sheen or adhesion. Laboratory tests using a Scrubbing Machine show remarkable durability of the Latex Emulsion formulation.

Scrub Resistance Test

Type of Material	Number of Strokes Withstood
Calcimine	None
Casein	2
Resin Emulsion	200
High Quality Resin Emulsion (Spred Luster)	20,000
Latex Emulsion (Spred Satin)	50-100,000

Spred Satin application is not confined to homes. Painters and Architects have taken advantage of its unusual properties, and today we find it widely used in the maintenance field in hospitals, schools, churches and office buildings.

Spred Gloss Latex Emulsion Enamel

In December 1952, The Glidden Company first announced Spred Gloss Latex Enamel, the

newest development in Latex Emulsions, and a companion product to Spred Satin. This development fulfilled a demand created by Spred Satin for a companion product of Latex Emulsion qualities in a high gloss range for use in kitchens, bathrooms, and on woodwork. Spred Satin and Spred Gloss are color matched, making it easy to have woodwork enameled in harmonizing and corresponding colors of walls.

A vast improvement over earlier Resin Emulsion Enamels, Spred Gloss is ready-mixed, has good flow, good color retention, and is easily washed from the brush with soap and water. Its elastic paint film readily withstands the abuse of shock or impact, miantaining good adhesion. This amazing Latex Enamel dries thoroughly in approximately 30 minutes.

The development of Spred Gloss has at last removed much of the labor from household enameling.

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