

ALLIED RESEARCH LABORATORIES

Report of Investigations
For the Month of March, 1946

M. VAN LOO

#162 - Studies in Flat Wall Paint Formulation

Considerable time and effort was spent on the formulation and development of a universal master painters' paste paint, to be reduced with varnish and/or thinner to produce flat, semi-gloss or gloss wall paints, wall primer and sealer, and enamel undercoater. This work has reached the point where a very satisfactory paste and reducing varnish have been developed, and only minor refinements remain to be handled.

Two paste paints have been developed, one on a Dehydrol varnish base and the other linseed. The Dehydrol varnish is preferred since control of after-yellowing is important in interior work. The preferred mixing varnish developed by the Varnish Research Division is CVR 452, a high solids low viscosity Pentolyn A - Dehydrol varnish. CVR 453 is a parallel linseed reducing varnish.

The opaque pigments in the paste include Titanox RC HT and rutile TiO_2 . Because of the current pigment and oil supply situation, the paste-reducing varnish combination cannot be promoted for sales. However, samples will be sent to Cleveland for evaluation and approval so that there would be no delay in getting into production should the supply situation ease.

Raw material cost comparisons of suggested mixtures (expressed as parts by volume paste-reducing varnish-thinner), viscosity, and opacity comparisons with parallel standard réxes may be summed up as follows:

Interior Gloss Wall Paint. Paste paint reduction 8-7-2.
Raw material cost based on Dehydrol \$104.83 per 100 gallons.
Opacity 14,614 units. Viscosity 41.5 seconds on #3 orifice.
Raw material cost based on linseed \$101.41.
Regular Interior Gloss. Formula of 8-20-45. Raw material cost \$100.47. Opacity 14,206 units.

Semi-gloss Wall Paint. Paste paint reduction 8-3 $\frac{1}{2}$ -2 $\frac{1}{2}$.
Raw material cost based on Dehydrol \$96.41. Opacity 17,747 units. Viscosity 33 seconds on #3 orifice. Raw material cost based on linseed \$94.75.

Regular Semi-Lustre White. Formula of 9-25-45. Raw material cost \$95.82. Opacity 21,280 units.

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M. VAN LOO
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#162 - Cont.

Flat Wall Paint. Paste paint reduction 8-0-3, preferably 1-1/2 parts mineral spirits, 1-1/2 parts kerosene. Raw material cost based on Dehydrol \$83.15. Opacity 22,590 units. Viscosity 11 seconds on #5 orifice. Raw material cost based on linseed \$84.22.

Proposed Paintercraft Flat #10. Raw material cost \$85.00. Opacity 24,210 units.

Wall Primer and Sealer. Paste paint reduction 8-1 1/2-3. Raw material cost based on Dehydrol \$88.37. Opacity 19,878 units. Viscosity 26-1/2 seconds on #3 orifice. Raw material cost based on linseed \$88.11.

Regular Wall Primer and Sealer. Formula of 8-6-45. Raw material cost \$73.23. Opacity 11,840 units.

Enamel Undercoater. Paste paint reduction 8-1-5. Raw material cost based on Dehydrol \$86.82. Opacity 20,704 units. Viscosity 30 seconds on #3 orifice. Raw material cost based on linseed \$86.97.

Regular Enamel Undercoater. Formula of 9-26-45. Raw material cost \$81.92. Opacity 21,275 units.

During the month a new formula was developed for the Paintercraft One Coat Flat #10 based on a raw material cost of 85¢ per gallon. The opaque pigmentation of the new flat is rutile titanium calcium and rutile titanium dioxide and the principal constituents in the vehicle are (3880)E and CW (1996) Linogel.

Due to recent changes in the type of volatile used in (3880)E, we have found it necessary to revise the above formula to reduce the initial viscosity. Based on recent tests it appears that the introduction of 20 F for 2188 dry will reduce the body to the proper consistency.

Work has been under way to improve the brushing properties of the present Flat-Tone White. The poor brushing properties of production as manufactured on the recent lithopons alternate formula may be due to the lack of CO₂ in the manufacture of CV 7014 and to the use of 461 S as a substitute for 461 L. 461 S produced rather high bodies in the aged paint. If the recommended cooking procedure for the manufacture of CV 7014 or (3880)E is not followed the brushing and washing properties of the flat wall paints seem to be affected adversely.

0007-SWP-045177

#12 - Exterior Primers

Panels 11005-11018 C were prepared for exposure at Chicago testing various primers to be used on fabricated Dural aluminum beveled siding. This supplements exposures being made by Cleveland. The primers used in this series include:

Rex 70110 - ANTP656-A-1 Zinc Chromate Primer
H 7645 - 52-P-18 Bureau of Ships Zinc Chromate Primer
Rex 16174 - Kromik Primer
Rex 27507 - Red Lead Primer
Rex 49 - Red Metal Primer
Rex 450 - SWP Undercoater

Half of the aluminum panels were solvent spray cleaned and treated with phosphoric acid, the other half only solvent spray cleaned. The special primers were followed by a coat of SWP 450 Undercoater and a coat of Gloss White, making three coats in all. One panel has only a two coat system of Rex 450 and Rex 471.

#183 - Pretreatment of Metal Surfaces for Painting

See Project No. 12.

#148 - Examination of White Lead

Preparations were made for a meeting of the L.I.A. White Lead Research Committee in New York on November 18.

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No work was done on the following projects:

#160 - Painting of Bricks

#178 - Studies of Dark Colored House Paints

#112 - Fire Retardant Paints

0007-SWP-045178

0007-SWP-000114549

#103 - Cont.

1. Control - no DDT.
2. 0.2% DDT in the primer.
3. 0.2% DDT in the top coat.
4. 0.2% DDT in both primer and top coat.

System #4 showed the best results, giving complete prevention of barnacle growth for four weeks and slight retarding of barnacle growth after 16 weeks. All other systems allowed some barnacle growth at the time of the first reading, 2 weeks. System #2 offered slight prevention of growth up to 8 weeks and System #6 up to 14 weeks.

#177 - Pigment Studies

Bulletin RC-81, "A Useful Hiding Power Comparison of Various White Pigments," was completed and distributed.

A shipment of ceramic grade TiO_2 was received from the Glidden Company. It was found that when the normal TiO_2 content of Rex 450 Undercoater was replaced with this ceramic grade material all characteristics of the Rex 450 Undercoater were normal except that it was definitely lower in opacity. An effort was made to compensate for this by using 135 pounds of the Ceramic TiO_2 instead of the 120 pounds in the regular formula, but this was of little help. Therefore, it was concluded that this material should be used in Rex 450 at the normal titanium poundage.

By working with the Auxiliaries Department we have arrived at a tentative minimum specification for 414 dry - 10% Leaded Zinc Oxide. Materials meeting this specification should be reasonably satisfactory for usage in house paint undercoaters and bases for tints, not whites. Following is an excerpt from Mr. C. H. Adams' report of December 2, 1946:

	<u>Minimum</u>	<u>Maximum</u>
% ZnO	87	93
% $PbSO_4$	6.3	
% $ZnSO_4$		0.5
Res. 325 mesh		0.2
Color	40 ¹	
Texture ²	Equal to lot 2226, Sample AURL-398.	

¹The minimum acceptable color for 414 for use in undercoater and base for tints is 40 on the color scale. This minimum color should be understood to be acceptable only as an emergency measure and every effort should be made to raise the color up to at least the color of average production of 48 as represented by lot 2226, sample AURL-398.

0007-SWP-045179

0007-SWP-000114550

#177 - Cont.

"The tone of the color of 414 if different from 412 should preferably be toward the yellow rather than the red. Present production is yellow toward the color standards but is definitely purplish red toward 412 standard. This reddish tone carries over into the paint and is undesirable.

2The texture must be equal to lot 2226, sample AURL-398, as determined by the spatula method.

Procedures

All tests are to be run according to the tentative outlined procedures dated 12-2-46 by Mr. Verduin.

Quality Cards

Quality cards, representing shipments, should show the following, as well as the usual, identifying data.

Color -- Actual rating on color scale

Zn

Pb

ZnO

PbSO₄

ZnSO₄

Texture -- Standard or standard plus,

325 Residue

C. H. Adams"

#182 - Study of Improved Mixing and Grinding Practices

Considerable time has been spent during the past month in attempting to standardize on a milling technique that will provide reproducible results consistently. The best method evolved to date consists in operating with feed roll hoppers at fixed positions well in from the edge of the rolls. All batches in a given series are then milled at the same setting. The full face of the grinding roll is not used and the amount used varies with batch consistencies and textures. The time for milling any given batch is therefore corrected inversely as the ratio length of roll/used roll face. Used roll face is equal to the width of the paint film on the grinding roll. Production rates are then calculated from the corrected milling time and compared.

0007-SWP-045180

0007-SWP-000114551

#12 - Cont.

Another sub-group tests OV-578 Plywood Sealer Concentrate from Oakland against CTV-4275 clear sealer and no sealer, with Rex 450 Undercoater as primer and Rex 471 Gloss White as top coat. On all the above, the same Rex 471, date C 1075 is used as top coat, the panels being mounted and caulked after priming as in 1945. Another sub-group consists of four shades of Premite paints from the Prefabrication Engineering Company, specially applied as textured finishes over OV-579 Ken Wood Sealer as against no sealer and CH 3285 as against Rex 450. (See Project #97.) Except for the small sub-group (a) above, all tests are on regular exterior Douglas Fir plywood; both regular and Super-Harborite are used in (a).

Exposures 7096 - 7100 F, a series of tests of Rex 450 Undercoater on one 9-foot cedar panel, were examined after 36 months at Florida, vertical south. The tests compare Rex 450 at 1, 2, 7, 15 and 30 days drying before recoating with Rex 471 Gloss White. No failure is shown at 3 years except moderate erosion, with very slightly less on the 1- and 2-day drying time samples. General appearance is good. Past Florida reports show no differences except a slightly earlier appearance of dirt on these same samples than on the longer dry. This test indicates that SWP 450 Undercoater is less critical as to recoating time than was true of SWP Gloss White when self-priming was recommended. SWP self-primed, when recoated after more than 48 hours' drying, showed reduced durability.

#148 - Examination of White Lead

A meeting of the L.I.A. White Lead Research Committee was held in New York on November 18 to review progress to date and to arrange for future work.

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No work was done during the month on the following projects:

#163 - One Coat House Paint

#183 - Pretreatment of Metal Surfaces for Painting

#160 - Painting of Bricks

#112 - Fire Retardant Paints

0007-SWP-045181

0007-SWP-000114552

#77 - Cont.

Number of Disc	FN Paint Number	Rex Number	Type and Quantity of Fungicide Used	Degree of Mildew Control	Test	Number Months Exposed
51	642	Rex 210	2% Dovicide 6 0.02% Hg. as ϕ Hg. Naphth.	5	1	6-1/2
52	643	" "	2% Dovicide 6 0.04% Hg. as ϕ Hg. Naphth.	3	0	"
53	644	" "	2% Dovicide 6 0.10% Hg. as ϕ Hg. Naphth.	1	0	"
54	645	" "	Dovicide 6 - 3% on paint	2	0	"

#12 - Exterior Primers

Panels 11213 - 11226 F were prepared, supplementary to the special plywood tests described for Chicago exposure under Project #12 last month. These cover the same CH-3285 Exterior Prefab Primer specials as listed under (a) and (b) of #12 in November (5% ZnO vs. 11.8% vs. no ZnO and special styrene varnishes from Resin Research). These tests are on regular Douglas fir beveled siding, for Florida south vertical exposure only, Rex 471, C 1075 being used as the top coat in all cases.

#162 - Studies in Flat Wall Paint Formulation

Flat Wall Paint

Shell has supplied new samples of deodorized thinners for tests in wall paints. These are Special Mineral Spirits Code 8296 and Dispersol Odorless Base Code 8233. Characteristics are as follows:

Name	Special Mineral Spirits	Dispersol
Code No.	8296	8233
A.P.I. Gravity	51	46.8
Specific Gravity	0.7753	.7936
Pounds per gallon	6.45	6.61
Color, Saybolt	30	30
Corrosion Cu. strip	Slight tarnish	Slight tarnish
Kauri Butanol Value	31	Approx. 28
Aniline Number $^{\circ}$ F.	154	-
Flash Tag $^{\circ}$ C $^{\circ}$ F.	112	155
Doctor Test	Negative	-
A.S.T.M. Distillation $^{\circ}$ F.	(See next page.)	

0007-SWP-045182

#162 - Cont.

<u>A.S.T.M. Distil- lation °F.</u>	<u>Special Mineral Spirits</u>	<u>Dispersol</u>
B. P. °F.	314	387
10%	326	409
50%	340	432
90%	365	464
End Point	388	485

The new samples were supposed to be further improvements over similar Shell thinners submitted earlier under the same code numbers. Actually, no improvement over the earlier samples was observed when used in Flat-Tone, but again the deodorized thinners were far superior to the regular stock thinners. We have recommended that Cleveland conduct full scale room tests.

Enamels

Comparative tests made on the alkyd formula of Rex 710 Enamel-oid White using 3 pounds respectively of aluminum and calcium stearate against the control with no soap, showed no tendencies toward seeding due to storage for two weeks alternately indoors and outdoors at temperatures down to 0° F. The tests are continuing.

Bad settling was reported on production Rex 50 Flat-Rite Undercoater about six months old. Apparently this batch was made on the formula carrying 2 pounds of aluminum stearate, subsequently replaced by 3 pounds of calcium stearate. Experimental batches of Rex 50 were made using these quantities of soaps, also certain surface active agents. After two weeks' storage the calcium stearate shows slightly better suspension properties than aluminum stearate. When Acto 450, Armeen C or AM Ac 118.5 C are used in addition to calcium stearate, there is an observable improvement in suspension. The samples will be rechecked after extended storage.

#148 - Examination of White Lead

Some progress has been made in accumulating data on tests of undercoaters and priming coats of varying white lead carbonate content for use by the L.I.A. White Lead Research Committee.

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No work was done during the month on the following projects:

#163 - One Coat House Paint

#160 - Painting of Bricks

#112 - Fire Retardant Paints

0007-SWP-045183

ALLIED RESEARCH LABORATORIES

Report of Investigations
For the Month of May, 1946

M. VAN LOO

#177 - Pigment Studies

Work continues on the study of white pigment opacity factors.

Paint Type III - Oleoresinous Flat

In this series of tests flat wall paints were made using single opacity pigments up to 18,000 Holley units. The total pigment volume including extender was maintained at 25.14 gallons. The vehicle solids were maintained at 19.04 gallons. The total yield was held at 100 gallons.

Type III Opacity Values

		<u>Opacity Sq.Ft./Lb.</u>					
<u>Dry No.</u>		<u>% Br.</u>	<u>91% CR</u>	<u>93% CR</u>	<u>95% CR</u>	<u>97% CR</u>	<u>98% CR</u>
108	XX 592 Zinc Oxide	86.9			64.3	49.2	41.4
461 L	Lithopone	88.7	66.0	57.5	44.4		
1271	Anatase Ti-Cal	90.7	85.9	79.3	69.2	(42.7)	
1403	TiO ₂ Anatase	84.8	181.0	162.0	139.5	(89.6)	
1538	Zinc Sulphide	87.1	106.2	91.3	77.8	66.8	54.0
1897	Ti-Bar FH	84.0	88.8	78.5	67.3	53.6	44.5
1901	TiO ₂ Anatase LO	85.3	160.5	144.4	124.2	101.6	89.7
2030	Titanox AA	85.0	181.0	150.0	124.0	104.6	92.5
2132	Titanox RC HT	87.1		100.2	82.8	71.1	64.2
2140	Titanox RC	88.0	105.5	93.3	78.7	56.1	
2173	TiO ₂ Rutile (R 200)	86.2	201.0	176.0	151.3	128.0	115.8
2229	TiO ₂ Rutile (R 510)	84.9	230.5	209.0	168.5	155.0	129.0

Type IV - Interior Gloss Enamels

Additions to tabulation given on page 6 of the April report.

<u>Dry No.</u>		<u>% Br.</u>	<u>91% CR</u>	<u>93% CR</u>	<u>95% CR</u>	<u>97% CR</u>	<u>98% CR</u>
2140	Titanox RC	86.1	132.2	114.8	95.9	(65.9)	
2173	Ti Pure R 200	88.5	(268.0)	210.0	177.4	142.8	(114.8)

A comparison of the above tabulation under Type III above with those values given earlier under Types I and IV is rather surprising in that many of the pigments show a lower efficiency than in either of the other types.

0007-SWP-045184

0007-SWP-000114555

M. VAN LOO
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#177 - Cont.

It was postulated that this difference must be a dispersion effect. In order to prove this point two series of tests were made based on flat wall paints used in the Type III series above. In each series paint A is a normal flat-standard grind. Paint B is Paint A reground to a 5 Hegman rating. Paint C consists of a mixture of two bases. Base 1 contains the opacity pigment ground to enamel fineness. Base 2 contains the extender pigment "stirred in." The final composition of Paint C is identical with A and B above. Paint D consists of a mixture of two bases, Base 1 as under "C" above and Base 3 which is identical with Base 2 except that the extender has been "ground in."

Series I
2229 dry Opacity Pigment - 20 F Extender

Opacity Sq.Ft./Lb. at 97% CR

Paint A	131.0
" B	208.0
" C	155.0
" D	135.0

Series II
1403 dry Opacity Pigment - 20 F Extender

Paint A	91.4
" B	94.9
" C	98.3
" D	114.0

From the above the importance of dispersion is evident, thereby accounting for many of the seeming discrepancies between Type III and Types I and IV.

A second comparison of basic importance was to determine whether or not there is one contrast ratio at which it would be more suitable to make comparisons between paints and pigments.

The first approach was practical. A contrasting background was prepared using a white, a pink and a green enamel. It was felt that this background represented the maximum contrast that would be expected to be covered by one coat with a good grade interior enamel.

0007-SWP-045185

0007-SWP-000114556

M. VAN LOO
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#177 - Cont.

Using an Enameloid made with 270 pounds 2229 dry, a normal brush-out was made on a 4 ft. x 4 ft. panel over the contrasting background. This just barely accomplished complete hiding. The spreading rate was 567 sq.ft./gal. The theoretical opacity at 95% C.R. calculates to cover 575 sq.ft./gal. for the above paint as compared to a spread of 722 sq. ft. at 95% C.R. and 434 sq. ft. at 97% C.R. Therefore, the selection of 95% as a practical contrast is indicated.

Comparative brightnesses on the white, pink and green background areas are 84.4%, 75.8% and 76.8%, respectively.

Another approach to the problem of selecting contrast ratio at which pigments could be most suitably compared was to formulate paints based on comparative opacities at different contrast ratios. There is little difference between paints and the relative quantities of pigments used whether a contrast ratio of 93, 95 or 97% be used for setting up the comparative paints. Therefore, a 95% C.R. seems thoroughly practical and suitable for general comparisons between pigments and paints.

The third basic factor affecting pigment opacity strength considered during the month was a study of extender effects.

It was found that the extender functions as vehicle when it is properly dispersed and the quantity is not so great that High Dry Hiding effects are obtained.

The chart below is presented to prove the above point. One new term is introduced here, H.P.V.C. meaning Hiding Pigment Volume Concentration.

1403 Dry - Oil Type Vehicle

Lbs. TiO ₂ / Gal.	<u>No Extender</u>			<u>Extender</u>			Lbs. 20 F/ Gal.
	P.V.C.	H.P.V.C.	Sq.Ft./Lb. at 95% CR	P.V.C.	H.P.V.C.	Sq.Ft./Lb. at 95% CR	
1.	5.84	5.84	173	36	5.84	286*	3.77
2.	11.02	11.02	180	"	11.02	175	3.50
3.	15.68	15.68	150	"	15.68	144	2.85
4.	19.85	19.85	125	"	19.85	120	2.58
5.	23.65	23.65	108	"	23.65	106	1.88

*This is apparently a High Dry Hiding effect.

0007-SWP-045186

0007-SWP-000114557

M. VAN LOO
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#162 - Studies in Flat Wall Paint Formulation

Flat Wall Paints

A new revision for Flat-Tone White has been developed and sent to Cleveland for distribution. Work on this formulation indicates that the sticky brushing and after-body tendencies of the present formula were due primarily to the reactivity of 461 L. Arrangements have been made with the Auxiliaries Department for the establishment of a specification for 461 L that will insure the manufacture of a pigment which will meet the requirements for Flat-Tone White and tints.

Semi-Lustre

Work was continued during the month on the development of a formulation for Semi-Lustre White, based on the use of CV 7013 (20 gallon tall oil P.E. maleic rosin, linseed varnish). Two formulations were developed, one based on a pigmentation of 461 L and 2132 dry and the other on 461 L and 1403 dry. The two formulas have been sent to Cleveland as possible alternate formulas for Semi-Lustre, when tall oils become available. The raw material costs are as follows:

	<u>Pigmentation</u>	<u>Vehicle</u>	<u>Cost</u>
Semi-Lustre White	50# 2188 dry	(3848) E	\$91.20
Alternate A Formula	192# 461 L	(48)	
8-22-45	475# 2132 "		
Semi-Lustre White	50# 2247 dry	AV 59	\$96.47
Formula 8-22-45	192# 461 S	(48)	
	475# 2132 "		
Semi-Lustre White	30# 1989 dry	CV 70 13	\$89.91
Formula OJ 927 J	192# 461 L	(48)	
	475# 2132 "		
Semi-Lustre White	125# 2247 dry	CV 7013	\$104.89
Formula OJ 951 J	25# 1989 "	(48)	
	360# 461 L		
	225# 1403 "		

A sample of Wet-Ego Paint Thinner was obtained from the Thompson-Hayward Chemical Company for test in Semi-Lustre White. This material is recommended for its slow rate of evaporation, long wet edge time, and non-toxic odor. One of the main points of interest in the claims for this material is the fact that it will not dull the gloss or cause flashing.

0007-SWP-045187

0007-SWP-000114558

M. VAN LOO
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#162 - Cont.

To check these claims a number of Semi-Lustro White batches were made, introducing the volatile as:

- (a) (348)
- (b) Approximately 50% (348) and 50% (3020).
- (c) Approximately 100% Wet-Edge Paint Thinner
- (d) Approximately 50% (348) and 50% Fractionated (141).

Based on previous tests we have found that the higher boiling fractions of (141) or (3020) are responsible for the drop in gloss experienced with Semi-Lustro. Therefore, it was decided to fractionate (141) and use only the material boiling in approximately the same range as the Wet-Edge Paint Thinner. The batch of Semi-Lustro made with the Wet-Edge Paint Thinner was similar in sheen to our present Semi-Lustro made with (348) and was quite similar in wet edge to the batch made with 50% (348) and 50% (3020). The Semi-Lustro made from the fractionated (141) and (348) was somewhat lower in sheen than the batch made with the Wet-Edge Thinner but it was definitely higher than the (348) and (3020) batch.

These results would indicate that a thinner similar to Wet-Edge Paint Thinner would be quite desirable in this case. The cost using Wet-Edge thinner would be prohibitive at their currently quoted selling prices. However, because longer wet edge in Semi-Lustro would be desirable, and because Wet-Edge thinner is unusual in the absence of any dulling effects on Semi-Lustro, it would be worth while to investigate other sources of supply.

A wide variety of volatiles in the kerosene range have been collected to study the effects in Semi-Lustro of variations in evaporation rate and solvent power.

Miscellaneous

Laboratory batches of SWP Gloss White, Enameloid White and Flat-Tone White made with naphthenate and octonate driers have been checked for drying after storage for 7-1/2 months. The past readings have only indicated very minor differences. However, after 7-1/2 months the octonates are showing slightly better drying than the naphthenates in the case of the Enameloid White and SWP Gloss White.

Chart follows.

0007-SWP-045188

M. VAN LOO
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#162 - Cont.

Form- ula No.	Type of Paint	When Prepared		After 7 Days		After 30 Days		After 70 Days		After 7-1/2 Mo.		Drier Used
		Hr.	Min.	Hr.	Min.	Hr.	Min.	Hr.	Min.	Hr.	Min.	
286 J	Flat-Tone White	-	25	-	51	-	50	-	45	-	30	Naphth.
287 J	" "	-	25	-	51	-	50	-	45	-	30	Oct.
288 J	Enameloid White	1	35	2	2	2	15	2	4 5	3	15	Naphth.
289 J	" "	1	45	1	52	2	10	2	20	2	45	Oct.
291 J	SWP Gloss White	5	15	5	2 5	5	40	6	22	6	15	Naphth.
292 J	" " "	5	5	5	20	5	20	5	47	5	20	Oct.

No noticeable difference in settling was evident between the paints made with naphthalene or octate driers.

#97 - SWP 471

An article was prepared for publication under the title, "Is It Safe to Paint My House Now?", discussing the subject of oil conservation house paints versus pre-war high oil paints. This is now in the hands of the Advertising Department.

Samples of Archer-Daniels Midland's #371 and #381 Grinding Oils were received for test. These oils are polymerized and specially processed linseed oils with the following characteristics:

	<u>#371 Oil</u>	<u>#381 Oil</u>
Acid Value	4 - 6	4 - 6
Viscosity	G - H +	G - H +
Color	7 - 8 +	9 + - 11
Sp. Gr.	.940 - .944	.940 - .944

The two oils were compared with the regular oil conservation vehicle carrying (2) and (48) in the SWP Gloss White and tint base formulations for drying characteristics, brushing, and flow. As reported below the Archer-Daniels oils were very similar in all respects to the oil conservation vehicle. The paints are to be exposed on cedar panels at Chicago and reports will be made on the comparative durability against the regulars at some later date.

0007-SWP-045189