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MEMORANDUM REPORT #M-79

FLOODING AND DURABILITY CHARACTERISTICS
OF TINTING BLACKS

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In Exposure Series 9169, 14 colors, representing pigment combinations possible under our present Short Oil "DULUX" Formulating Practice, were chosen and made up, first, by using Carbon Black (W-201). Then the colors were matched by using Bone Black (W-284), Lamp Black (W-205), and Raven #15 (coarse grade Carbon Black). Six of the colors were also matched by using Black Iron Oxide (W-215) and Cabot #99, another coarse grade Carbon Black.

This group of pigments represents Blacks which are used at present (W-201, W-284, W-205), and three (Raven #15 Cabot #99, W-215) which are not used and have not been evaluated for flooding and durability characteristics. This memorandum will report the results of the flooding tests.

For the flooding study, various methods of application were used: Dip, Brush, Flow and Spray. A statistical method was used to evaluate the flooding of each of the Blacks under all these conditions. The following scale was used:

- 1.) Flooding: but not visible with the unaided eye.
- 2.)
- 3.) Visible Flooding: Color difference between thick
- 4.) and thin film of a moderate degree.
- 5.) Easily visible flooding: Serious, very definite
- 6.) color differences.

Table I. shows in full detail the evaluation of all the pigments under all the methods of application.

Interpreting these results statistically, and assigning Carbon Black (W-201) a relative flooding degree of 1.00, Table I is summarized as follows:

<u>Pigment</u>	<u>Relative Flooding Degree</u>	<u>Relative Tinting Strength</u>
W-215	1.50	0.19
W-201	1.00	1.00
Cabot #99	0.94	0.97
W-284	0.78	0.18
Raven #15	0.76	0.68
W-205	0.70	0.35

Lamp Black (W-205) shows the best flooding characteristics. Raven #15 floods slightly more than Lamp Black and about the same as Bone Black (W-284). Black Iron Oxide (W-215) floods badly and would be of little use as a black pigment in "DULUX".

If, as is expected, results from the exposure test prove that Raven #15 does not fade as badly as Bone Black (W-284) and has better gloss retention than Lamp Black (W-205), then it will be recommended that it be adopted as a substitute for Bone Black (W-284), and possibly Lamp Black (W-205).

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