

CROSS REFERENCE

PUNCH CARD INDEX

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Marshall Laboratory
October 19, 1951

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MEMORANDUM REPORT NO. M-395

THE IMPROVED GLOSS OF 295 LINE WHITE

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INTRODUCTION

NOT FOR CIRCULATION

In order to revise the 295 Line White, previously meeting Specification 52-L-26, to conform to Specification MIL-L-7178, it was necessary to have a minimum gloss of 80. The current paste-type dispersion for the white pigment (WX-003) is unable to consistently give this minimum gloss in the finished product.

It has been long established that a roll stock dispersion, though more expensive, gives a higher gloss than the paste type. In the attempt to raise the gloss and to maintain minimum cost, blends of roll stock and paste dispersions were formulated to produce the same ultimate compositions.

CONCLUSION

In the 295 line vehicle when small increments of white roll stock were added to the paste-type dispersion, the gloss was raised at a rather high rate, tending to level off as the roll stock increased. In the above problem, it was found that if 20% of the pigment was added by roll stock dispersion, the gloss was increased from 73 to 89, although further additions of roll stock did not appreciably effect the gloss. It is evident that if this system can be applied to other vehicles and pigments, the following effects may be realized:

1. A less expensive product with no sacrifice in gloss by substituting paste dispersion for a large part of the roll stock in 100% roll stock formulations.
2. An increase in gloss in existing paste dispersions at a small increase in cost by adding a small amount of roll stock-type dispersion.

EXPERIMENTAL

The 295 line vehicle is composed of nitrocellulose, Dura-plex ND-77-B and tricresylphosphate at a ratio of 10/18.8:3.6. Since this specification is of the composition type, no attempt was made to evaluate the results in any other type of vehicle.

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All gloss determinations were made by the pour method, conforming to TM-92-C. The composition of the finished product would be the same in all cases, making allowances for the extra cellulose nitrate and plasticizer added by the roll stock. The roll stock, now coded RX-1250, was formulated to have the maximum pigment content consistent with good rolling and gloss.

The results obtained in these various compositions and gloss readings are found in the attached graph.

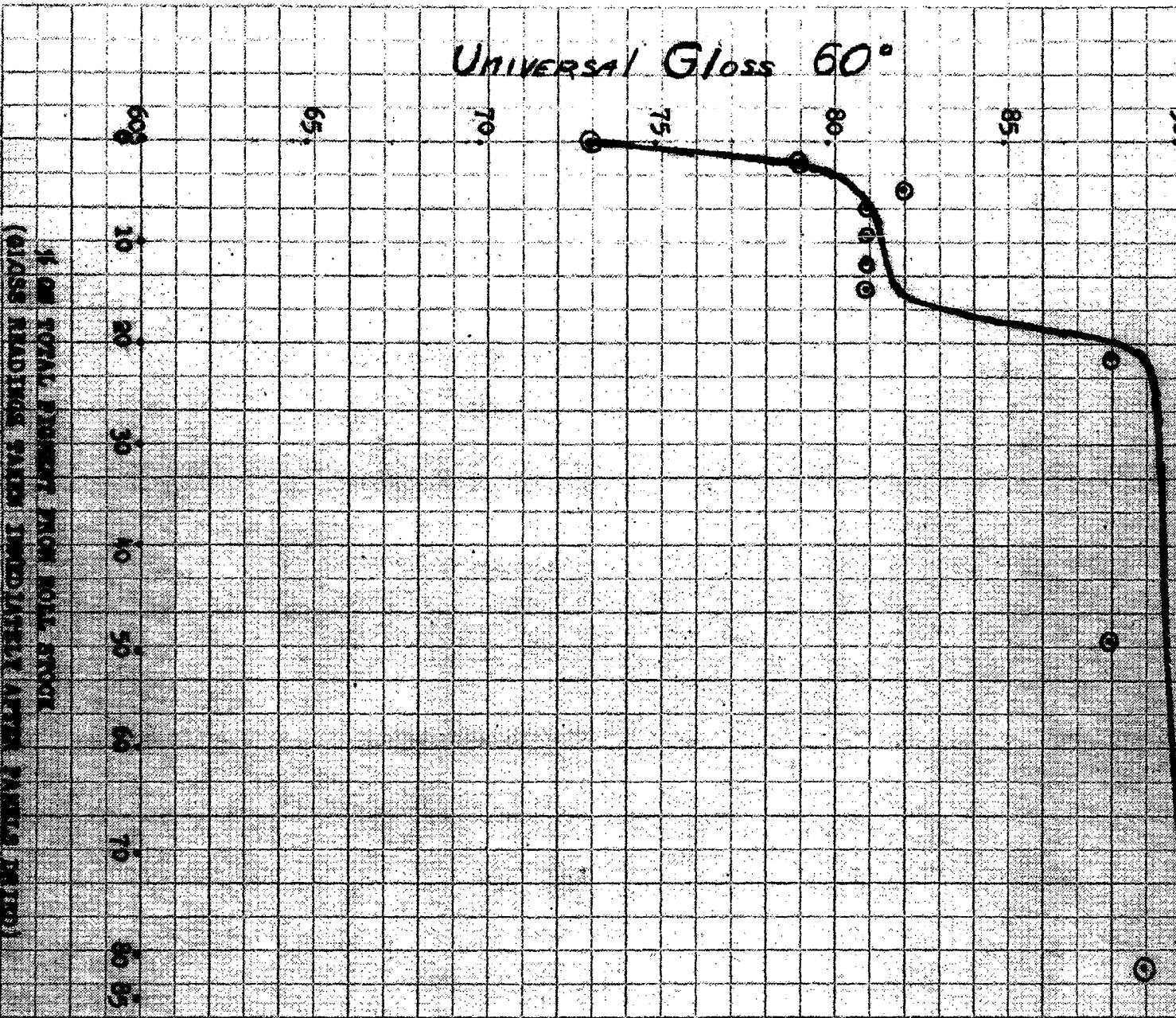
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R. A. ROBICHAUD

RAR:aig
10/17/51
Attach.

Universal Gloss 60°



1. ON TOTAL PERCENT FROM ROLL STOCK
(GROSS READING PAIR IMMEDIATELY AFTER FINISH DRYING)

TRAC
VIA