

PROJECT ADMINISTRATION DATA SHEET

ORIGINAL REVISION NO. _____

Project No. A-3254

DATE 5/28/82

Project Director: Mr. Leslie Henton School/Lab EMSL

Sponsor: Simmons USA; Atlanta, GA 30314

Type Agreement: P. O. # A83212

Award Period: From 5/4/82 To 5/12/82 (Performance) _____ (Reports)

Sponsor Amount: \$400 (not to exceed) Contracted through: _____

Cost Sharing: _____ GTRI/GPX

Title: Simmons HAB Frame Painting Operation

ADMINISTRATIVE DATA OCA Contact Linda H. Bowman x4820

<p>1) Sponsor Technical Contact:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>2) Sponsor Admin/Contractual Matters:</p> <p><u>Mr. Jack Wise #3</u></p> <p><u>Purchasing Agent</u></p> <p><u>Simmons USA</u></p> <p><u>353 Jones Ave., N.W.</u></p> <p><u>Atlanta, GA 30314</u></p> <p>_____</p> <p>_____</p>
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Defense Priority Rating: none Security Classification: none

RESTRICTIONS

See Attached N/A Supplemental Information Sheet for Additional Requirements.

Travel: Foreign travel must have prior approval - Contact OCA in each case. Domestic travel requires sponsor approval where total will exceed greater of \$500 or 125% of approved proposal budget category.

Equipment: Title vests with N/A

COMMENTS:



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SPONSORED PROJECT TERMINATION SHEET

Date 5/28/82

Project Title: Simmons HAB Frame Painting Operations

Project No: A-3254

Project Director: Mr. Leslie Henton

Sponsor: Simmons USA

Effective Termination Date: 5/12/82

Clearance of Accounting Charges: _____

Grant/Contract Closeout Actions Remaining:

- Final Invoice and Closing Documents
- Final Fiscal Report
- Final Report of Inventions
- Govt. Property Inventory & Related Certificate
- Classified Material Certificate
- Other _____

Assigned to: EMSL (School/Laboratory)

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Georgia Institute of Technology

ENGINEERING EXPERIMENT STATION

ATLANTA, GEORGIA 30332

May 13, 1982

Mr. Marvin Williams, Purchase Agent
Simmons U.S.A.
353 Jones Avenue, N.W.
Atlanta, GA 30314

Dear Mr. Williams:

In accordance with Simmons P.O. A 83212, research was conducted to determine by what means and the feasibility of reclaiming approximately 20 drums of unuseable paint. The results of our investigation, as well as our conclusions and recommendations are embodied in the following report.

PROBLEM

From information obtained from Mr. Jack Wise and Mr. Marv Williams, the dip tank in the HAB frame section was filled with 1000 gallons of Durako (2-6-3250) Black Dip Baking Enamel on February 16, 1982. The paint was reduced to a viscosity of (19-23) seconds on a #2 ZAHN cup using Mineral Spirits #75 from Chemical Central with a Kauri-Butanol Value of 36 and the dip tank put into operation. This viscosity was maintained with periodic additions of mineral spirits. Around or about the week of April 26th the paint began to increase in viscosity and start to gel.

In order to resume production the non-useable paint in the dip tank was pumped out into drums, the dip tank flushed with Solvesso 150 (the solvent recommended by Durako), the dip tank filled with fresh paint, and the proper viscosity obtained by reducing with Solvesso 150.

Apparently the use of the lower Kauri-Butanol Value Mineral Spirits (36) opposed to the recommended Solvesso 150 (Kauri-Butanol Value 90) resulted in the paint vehicle solids and the pigment to come out of solution leading to the thickening and gelling phenomenon.

RECLAIMING PROCEDURES

In order to salvage the unuseable paint, we proceeded to determine what ratio of drummed off material could be added to the dip tank paint without altering the appearance of the finished frames or sacrificing the intended paint qualities. The following steps were taken in the laboratory:

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1. Reduced original standard paint with Solvesso 150 to 21 seconds on #2 ZAHN cup to match material in dip tank.
2. Added the equivalent of one drum (55 gallons) of unuseable material to the equivalent of 1000 gallons of dip tank material, by mixing thoroughly small additions of "good" material to the "bad" material.
3. After dipping a scrap piece of frame into above mixture, gel and pigment particles were easily seen in the paint film.
4. Strained mixed material thru cheese cloth and dipped another piece of scrap frame, appearance was equal to a scrap piece dipped in regular tank material.
5. Both pieces of frame, one dipped in regular dip tank paint and one dipped in mixed material were then cured 15 minutes at 250°F. The two pieces were then compared for: appearance, hardness, adhesion and gloss.
6. Samples from drums numbered #5, #10, #15 and #20 were then tested using the above procedures.

CONCLUSIONS AND RECOMMENDATIONS

In each instance the material trapped on the cheese cloth after straining appears to be gelled vehicle solids and pigment particles. Therefore, instituting the above procedure would remove a portion of the paint solids.

However, the scrap pieces dipped in the strained solutions from drums #5, #10, #15, and #20 appeared to be equal in appearance, hardness, adhesion and gloss to a scrap piece dipped in the regular paint mixture.

There are two recommendations that can be made for reclaiming the non-useable material. The first being the best, the second a reasonable alternative.

1. Contact the paint manufacturer (Durako) informing them of the contents of the drums, and requesting a price for re-working the material off into subsequent batches.
2. Simmons U.S.A. can re-work the non-useable material by thoroughly mixing approximately one-half drum of the "bad" material with one-half drum of "good" paint from the dip tank, straining thru cheese cloth and adding two drums of this mixture to your 1000 gallon dip tank every three to four weeks depending upon production and how quickly fresh paint is added to the dip tank. Of course by removing some of the paint solids by straining, you are losing some of your paint quality. Simmons will be required to determine how important this is to their frame painting

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operation.

Contents of 20 drums of material pumped from dip tank deemed unuseable:
Durako (2-6-3250) Black Dip Baking Enamel
Chemical Central - Mineral Spirits #75

Respectfully submitted,

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Leslie E. Henton
Research Scientist
Energy and Materials Sciences Laboratory

DISCLAIMER: This report represents the opinion of the author. It carries no official endorsement by Georgia Institute of Technology.