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Form Approved  
OMB No. 0704-0188

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1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE 30 SEP 2001	3. REPORT TYPE AND DATES COVERED FINAL 29 SEP 00 - 30 SEP 01
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4. TITLE AND SUBTITLE MANAGEMENT AND OPERATION OF THE PRODUCTION ENGINEERING DIVISION STEREOLITHOGRAPHY (SL) LABORATORY	5. FUNDING NUMBERS DAAH 01-98-D-2001 D.O. 107
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6. AUTHORS  
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8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT  
A

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)  
  
SEE ATTACHED  
  
20020314 116

14. SUBJECT TERMS

15. NUMBER OF PAGES  
2

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT  
UNCLASSIFIED

18. SECURITY CLASSIFICATION OF THIS PAGE  
UNCLASSIFIED

19. SECURITY CLASSIFICATION OF ABSTRACT  
UNCLASSIFIED

20. LIMITATION OF ABSTRACT  
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**Management and Operation of the  
Production Engineering Division  
Stereolithography (SL) Laboratory**

**Final Report**

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US Army Aviation and Missile Command  
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September 2001

# Management and Operation of the Production Engineering Division Stereolithography (SL) Laboratory

Final Report  
September, 2001

## 1.0 INTRODUCTION

The Production Engineering Division (PED), SEPD, MRDEC, AMCOM has the mission and function of providing rapid prototypes via SL to various AMCOM customers. The PED provides the following services to its customers: assistance in generating acceptable Computer Aided Design (CAD) files, delivering these files to the SL laboratory, building SL prototypes using both the ACES and QuickCast. (QC) build styles, finishing prototypes to the customers' specifications, and facilitating the investment casting of QC prototypes. The PED requires engineering support in performing these SL tasks.

## 2.0 OBJECTIVE

The purpose of the work performed under this task order was to provide engineering support in producing SL prototypes for the PED customers.

## 3.0 TASKS

3.1 The tasks completed under this contract consisted of four (4) primary duties: maintaining the lab, quoting projects, scheduling projects and completing projects.

3.1.1 Maintaining the lab shall included tracking the needs of material and chemicals, as well as ensuring the lab continues to utilize state-of-the-art technologies. Maintaining state-of-the-art technologies included continuous research in the field, networking with other rapid prototyping service bureaus and users, and participating in conferences and user groups.

3.1.2 Scheduling projects included enhancing the build time estimator to incorporate QC builds and maximizing the SLA run time efficiency.

3.1.3 All SL prototypes were built using the PED SL equipment, including preparing and finishing the parts to customer specifications in accordance with standard SL procedures. This includes ACES and QC prototypes. Investment casting of QC prototypes were facilitated with various foundries.

3.2 The feasibility of developing relationships with private industry via Cooperative Agreements and other technology transfer avenues was investigated.