

Technical Report 5-20624 & 5-20625
Contract No. DAAH01-98-D-R001
Delivery Order No. 48

**RESEARCH, EVALUATION AND ANALYSIS OF
DESIGN CHANGES TO THE MLRS LAUNCHER AND CARRIER
(5-20624 & 5-20625)**

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PREFACE

This technical report was prepared by the staff of the Research Institute, The University of Alabama in Huntsville. The purpose of this report is to provide documentation of the work performed and results obtained under Delivery Order 48 of AMCOM Contract No. DAAH01-98-D-R001. Mr. Gary A. Maddux was the principal investigator. Mr. Bert Jones served as the lead engineer on the effort. Mr. Andrew Mullins, Systems Engineering and Production Directorate, Research, Development and Engineering Center, provided technical guidance.

The views, opinions, and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy, or decision unless so designated by other official documentation.

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Prepared for: Commander
U.S. Army Missile Command
Redstone Arsenal, AL 35898

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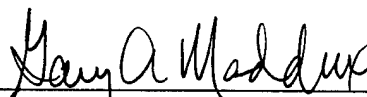

Principal Investigator

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1.0 Introduction

The System Engineering and Production Directorate (SEPD), Research Development and Engineering Center (RDEC), U.S. Army Aviation and Missile Command (AMCOM) has an engineering support contract with the University of Alabama in Huntsville. The scope of the contract provides for activities in system engineering and manufacturing technology. The Industrial Operations Division (IOD), SEPD, RDEC, AMCOM has the mission and function of providing technical management and engineering analysis as they relate to design changes for AMCOM supported weapon systems. This management and analysis ensures that design changes are incorporated only after a systematic technical evaluation and review of the total cost of the change is conducted. The systems engineering analysis evaluates the long-term life cycle consequences of the change, to include impacts on the manufacturability, maintainability and supportability of the overall weapon system.

In order to fulfill its mission, IOD required research, analysis and evaluation of proposed changes to the Multiple Launch Rocket System (MLRS) launcher and carrier. This research effort concluded with a detailed analysis of the impacts of proposed changes on the current manufacturing processes and life-cycle support activities that were currently in place within the MLRS Project Office.

2.0 Objective

The objective of the work performed under this task order was to research, evaluate, analyze and develop recommendations as to the impacts of current proposed design changes to the MLRS launcher and carrier. These recommended design solutions required close interaction with the MLRS Project Office, their prime and sub-contractors, and other Government agencies. The solutions were presented to the MLRS Project Office and the IOD in the form of briefings and other detailed presentations as required by the project office.

3.0 Statement of Work

The statement of work, as outlined in delivery order 48, was as follows:

- 3.1 UAH shall provide engineering and technical expertise to evaluate and provide solution options related to spare parts procurement problems.
- 3.2 UAH shall analyze the producibility of the MLRS weapon System and subsystems. The analyses shall be performed on parts specifically identified by the government. UAH shall analyze TDP data (listings, engineering documentation and changes thereto) to advise the government if the present baseline and/or detail drawings are adequate for competitive procurement and/or manufacture. UAH shall, during TDP analyses, document any cost reduction opportunities in the TDP, using generally accepted value engineering

methodology. UAH shall provide a written report for each TDP analyzed. UAH shall provide recommended TDP updates where applicable.

- 3.3 UAH shall perform systems engineering analysis on producibility problems identified during the procurement cycle of MLRS secondary items. The analysis shall require a review of drawings, specifications, and related materials pertaining to the identified problem. UAH shall determine and recommend solutions to the producibility problem(s) and provide rationale to support recommendations. UAH shall, during engineering analysis, document any cost reduction opportunities in the TDP, using generally accepted value engineering methodology. Results of the analysis shall be prepared and furnished in a written report.

4.0 Conclusion and Recommendations

During the time frame allocated by the delivery order, members of the UAH Systems Management and Production Lab, with the cooperation of representatives from AMCOM Systems Engineering and Production Directorate and the MLRS Project Office, investigated the life cycle supportability of proposed changes to the MLRS launcher and carrier. Specifically, TDP data was examined for completeness and accuracy in its use for competitive procurement and manufacture. To ascertain this information, UAH worked with the MLRS project offices, its prime and sub-contractors, and other government agencies. The results of these task efforts were published and delivered to IOD under separate cover.