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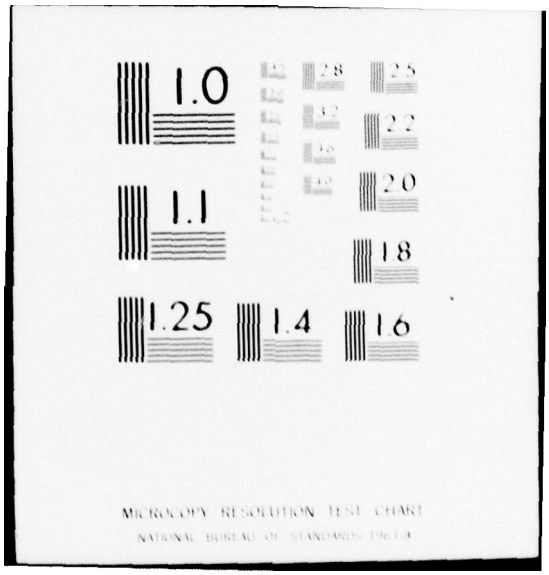
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Final Report

SUMMARY OF PROGRAM ACTIVITIES PERFORMED FOR DEVELOPMENT MANAGER'S OFFICE OF U.S. ARMY REMOTELY PILOTED VEHICLE PROGRAM

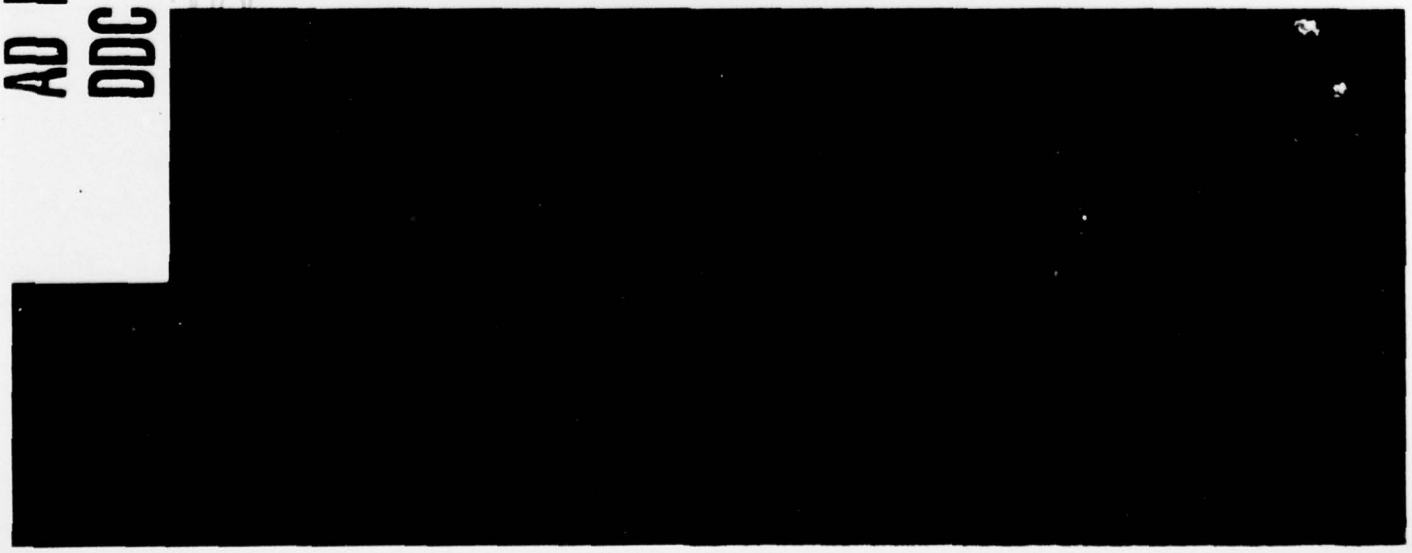
May 1978

Prepared for

U.S. ARMY AVIATION RESEARCH AND DEVELOPMENT COMMAND
Development Manager's Office
St. Louis, Missouri

Under Contract F33657-77-D-0029-0011

ARINC RESEARCH CORPORATION



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ARINC RESEARCH CORPORATION

CORPORATE HEADQUARTERS
2551 Riva Road
Annapolis, MD 21401

SANTA ANA BRANCH
1222 E. Normandy Place
Santa Ana, CA 92702

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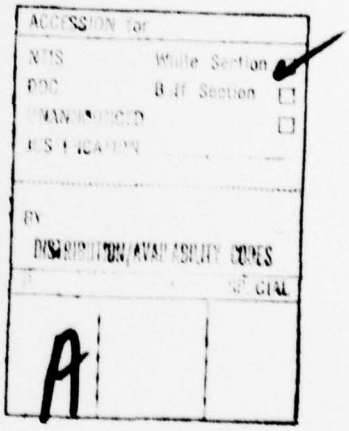

ABSTRACT

This report summarizes ARINC Research Corporation's activities in behalf of the U.S. Army Remotely Piloted Vehicle (RPV) Program for the Development Manager's Office (DMO), U.S. Army Aviation Research and Development Command (AVRADCOM), St. Louis, Missouri. These activities were conducted under Contract F33657-77-D-0029-0011.

CONTENTS

1
INTRODUCTION

1.1 BACKGROUND

The U.S. Army Remotely Piloted Vehicle Program began in the early 1970s when an RPV technology demonstrator system was conceived and planned. The initial program objective was to demonstrate that an industrial technology base existed for the development of an RPV system providing real-time target surveillance, acquisition, location, and laser designation.

The technology demonstrator system, designated Aquila, was developed and produced by Lockheed Corporation. Concept feasibility testing began early in 1975, and since that time the Aquila system has undergone more than 2 years of extensive testing at Ft. Huachuca, Arizona; Ft. Sill, Oklahoma; and Ft. Bliss, Texas. The results of these tests have been summarized in several Army Reports[1][2] which substantially corroborate the feasibility and effectiveness of the RPV system.

The Army is now planning to enter a Full Scale Development (FSD) RPV program phase. Based upon Aquila test experience and recent technological advances in imagery and communications subsystems, the DMO intends to develop and field a high-performance RPV system with substantial growth provisions at a minimum life cycle cost.

1.2 SCOPE OF ARINC ACTIVITY

In mid-1977, ARINC Research began working with the RPV DMO to ensure a smooth transition from the Advanced Development Phase to Full Scale Development. Initially, ARINC Research Corporation conducted system acquisition strategy studies to establish an optimum procurement approach for the FSD phase. The study results were presented in briefings at AVRADCOM during October 1977 and ultimately summarized in an ARINC Research final report.[3] Following the acquisition strategy studies, ARINC Research was retained to provide draft documents to be incorporated into essential program-required data packages to be presented to key Army review boards. The draft documents prepared by our company included an RPV System

Specification, a Management Plan, a Program Requirements Document, and a Specification Tree. Each of these documents is summarized in the following section.

In addition to the preparation of these draft documents, ARINC Research participated in a number of program documentation reviews held at AVRADCOM.

Some of the draft documents prepared by ARINC Research, in combination with additional documents prepared by AVRADCOM personnel, comprised the final RPV Development Plan (DP) which will be used in support of the forthcoming RPV Program In-Process Review (IPR) planned for July 1978. The remainder of the ARINC Research draft documents will be incorporated in the RPV system Request for Proposal (RFP) being prepared at AVRADCOM. The RPV DP was finalized in April 1978 by ARINC Research and was submitted to AVRADCOM as the final report for a parallel ARINC effort performed under Contract F33657-77-D-0029-0013.

1.3 REFERENCES

1. U.S. Army Field Artillery Board, Final Test Report for Force Development and Experimentation (FD&E) of the Remotely Piloted Vehicle (RPV) System, TRADOC Project Number 6-A1-53E-RPV-003, 6 January 1978.

2. U.S. Army Electronic Proving Ground, Final Report – Engineering Design Test-Government (EDT-G) of Remotely Piloted Vehicle-System Technology Demonstrator (RPV-STD), February 1978.

3. ARINC Research Corporation, Final Report – System Configuration and Acquisition Alternatives for Mini-RPV, Publication 1980-01-1-1674, November 1977.

2
SUMMARY OF DOCUMENTS

Each of the draft documents prepared under this contracted task is discussed in the following paragraphs.

2.1 RPV SYSTEM SPECIFICATION

ARINC Research began preparing a draft RPV system specification in November 1977. A preliminary version was provided to AVRADCOM for review in February 1978, and the final draft version was submitted to AVRADCOM in April 1978. The RPV system specification, as well as other subsystem specifications, underwent a final review at AVRADCOM in mid-May, and will be finalized and incorporated as an appendix to the RPV system RFP. That document is classified CONFIDENTIAL.

2.2 PROGRAM MANAGEMENT PLAN

The preliminary draft of the Program Management Plan (PMP) was provided to AVRADCOM in January 1978 and has since undergone several revisions. The final PMP was incorporated into the RPV DP, Section 3.3, in April 1978. The PMP defines the program guidelines; program management organization; cost, schedule, and performance control system; program management issues; and overall FSD program schedule.

2.3 PROGRAM REQUIREMENTS DOCUMENT

The Program Requirements Document (PRD) is intended as a background information document for all cognizant military and contractor personnel participating in the RPV program. The PRD outlines the Aquila program, including test results and lessons learned; FSD phase plans and schedules as well as the selected acquisition strategy; a brief outline of the salient features of the RFP; and proposal evaluation criteria to be employed during source selection. The PRD draft was provided in March, 1978. Portions of this document will be used in the preparation of the system RFP.

2.4 SPECIFICATION TREE

The draft version of the Specification Tree was provided to AVRADCOM in March 1978. This document presents a hierarchy of specifications that will be imposed on system and/or subsystem contractors in the related system and/or subsystem specifications included as an appendix to the RFP.

The Specification Tree will be used as a means of cross-checking a specific parametric requirement versus the accepted and approved military standard, handbook, or subtier specification dealing with the particular parametric requirement. The document will ultimately be updated after the system and subsystem specifications are finalized in mid-May 1978.