TECHNICAL MANUAL

ORGANIZATIONAL MAINTENANCE MANUAL
RADAR INTERFACE EQUIPMENT MAINTENANCE
EXPANDED TROUBLESHOOTING
(LOGIC DIAGRAM MAINTENANCE TABLES)

GUIDED MISSILE
AIR DEFENSE SYSTEM
AN/TSQ-73

DEPARTMENT OF THE ARM **10 JULY 1984**

TECHNICAL MANUAL

No. 9-1430-655-20-3-2 .

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D. C., *10 July 1984*

ORGANIZATIONAL MAINTENANCE MANUAL
RADAR INTERFACE EQUIPMENT MAINTENANCE

EXPANDED TROUBLESHOOTING
(LOGIC DIAGRAM MAINTENANCE TABLES)

GUIDED MISSILE AIR DEFENSE SYSTEM
AN/TSQ-73

REPORTING OF ERRORS

You can help improve this publication. If you find any mistakes, or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to: Commander, U. S. Army Missile Command, ATTN: AMSMI-LC-ME-P, Redstone Arsenal, AL 35898-5238. A reply will be furnished to you.

TABLE OF CONTENTS

TABLE OF CONTENTS-Continued

TABLE OF CONTENTS-Continued

LIST OF ILLUSTRATIONS

LIST OF ILLUSTRATIONS-Continued

LIST OF ILLUSTRATIONS-Continued

LIST OF ILLUSTRATIONS-Continued

LIST OF ILLUSTRATIONS-Continued

LIST OF ILLUSTRATIONS-Continued

LIST OF ILLUSTRATIONS-Continued

LIST OF ILLUSTRATIONS-Continued

LIST OF ILLUSTRATIONS-Continued

LIST OF TABLES

LIST OF TABLES-Continued

LIST OF EFFECTIVE PAGES

Insert latest change pages, dispose of superseded pages in accordance with applicable regulations.

NOTE: On a changed page, the portion of the text affected by the changes is indicated by a vertical line in the outer margins of the page.

Dates of issue for original and change pages are:

Original ..... 0 ..... 10Jul 84
Change ..... 1 ..... 25 Oct 90
Change ..... 2 ..... 24 Jun 91

TOTAL NUMBER OS PAGES IN THIS PUBLICATION IS 578, CONSISTING OF THE FOLLOWING:

Page No	*Change No	Page No	*Change No	Page No	*Change No.
A	2	5-156	0	5-449	2
B Blank	2	5-157-5-159	2	5-450-5-472	0
i-xiv	1	5-160	0	5-473	2
5-1-5-4	1	5-161	2	5-474	0
5-5	2	5-162 - 5-176	0	5-475	2
5-6-5-7	0	5-177	2	5-476-5-477	0
5-8-5-9	2	5-178-5-325	0	5-478-5-480	2
5-10	0	5-326	2	5-481-5-495	0
5-11-5-12	2	5-327-5-329	0	5-496	2
5-13	0	5-330-5-333	2	5-497-5-498	0
5-14-5-16	2	5-334	0	5-499-5-500	2
5-17-5-37	0	5-335-5-338	2	5-501	0
5-38	1	5-339-5-341	0	5-502-5-503	2
5-39	2	5-342-5-345	2	5-504	1
5-40-5-50	1	5-346-5-347	0	5-505	2
5-51-5-92	0	5-348	2	5-506	0
5-93	2	5-349-5-370	0	5-507	2
5-94-5-99	0	5-371-5-372	2	5-508	0
5-100-501	2	5-373-5-435	0	5-509-5-512	2
5-102-5-144	0	5-436	2	5-513-5-563	0
5-145-5-146	2	5-437-5-439	0	5-564 Blank	0
5-147-5-151	0	5-440	2		
5-152-5-155	2	5-441-5-448	0		

*Zero in this column indicates an original page.

CHAPTER 5
RADAR INTERFACE EQUIPMENT EXPANDED TROUBLESHOOTING

Section I. INTRODUCTION

5-1. Scope. The expanded troubleshooting part of TM 9-1430-655-20-3 of Radar Interface Equipment (RIE) Maintenance for Guided Missile Air Defense System AN/TSQ-73 is contained in volumes 2 through 7. It provides supplemental information for the use and guidance of advanced personnel responsible for repair of the RIE beyond the scope of organizational maintenance covered in the basic TM 9-1430-655-20 series of technical manuals.

5-2. Expanded Troubleshooting Concept. Expanded troubleshooting is required when existing fault isolation procedures in the basic manuals fail to isolate and correct a malfunction. The troubleshooting covered in this manual is based on the use of existing onsite equipment (tapes, tools, test equipment, spare parts, and publications). Isolation of malfunctions is based on the fault analysis of normal system operating conditions and the use of built-in maintenance and diagnostic (M&D) software programs.

5-3. Troubleshooting Aids. Volume 2, TM 9-1430655-20-3-2, contains the circuit card locations in logic diagrams index and the key signal lookup listing. Volume 3, TM 9-1430-655-20-3-3, contains overall functional descriptions, detailed descriptions, and the related functional block diagrams. Reference to the applicable logic diagram number is made in each detailed description paragraph. Power distribution diagrams, cabling diagrams, and front-panel schematic diagrams are also supplied in volume 7. Volumes 4 through 6 contain the logic diagrams for the functional systems of the RIE. The TM numbers and content are:

TM 9-1430-655-20-3-4	Video Processor Unit 1 and 2
TM 9-1430-655-20-3-5	Radar Integration Unit 1 and 2
TM 9-1430-655-20-3-6	16K Memory Unit, Video Simulator Unit
TM 9-1430-655-20-3-7	RIE Front Panel, Power Distribution, Interconnect Diagrams

Logic diagrams for the Radar Simulator Unit are functionally located for circuit analysis throughout volumes 4 through 6.

a. Input/Output Tables. Input and output tables are provided, as applicable, for each figure and sheet to enable easy access to signals referenced to other diagrams.

b. Input/Output Symbols. Symbols used on diagrams to indicate input and output signals include the following:


Indicates input from another figure.


Indicates input from the same figure.


Indicates output to another figure.


Indicates output to the same figure.


Indicates output to the same and another figure.

c. Equipment Interface. The troubleshooting diagrams may reference inputs and outputs interfacing between other pieces of equipment. When a notation shows that external equipment is involved, it is assumed that the user will refer to the applicable troubleshooting information provided for that equipment.

d. Logic Symbols. Logic symbols depend on card types. For discrete circuit cards containing conventional integrated circuits, conventional logic symbols are used. These symbols are used independently, with card locations and card pin numbers notated with the symbol. For analog circuits, circuit card details are provided only to functional level.

5-4. Physical Description (fig. 5-1). The RIE includes all the electronic components in electrical equipment rack 1, a panel located adjacent to rack I and a radar junction box located external to the electrical equipment shelter. (The radar junction box is not physically or functionally covered in this manual.) The RIE consists of RIE I panel 1AIA4, RIE II panel 1A1A1A1, radar integration unit (RIU) 1A1A1A4, video processor unit (VPU) 1A1A1A5, single-port 16K memory unit 1A1A1A7, connector assembly 1A1A1A8, dc/dc converters 1A1A1PS1 thru 1A1A1PS10, dc/dc converter 1A1A1A7PS1, radar interface panel 1A1A5, radar simulator panel 1A1A1A2 and video simulator unit (VSU) 1A1A1A3.

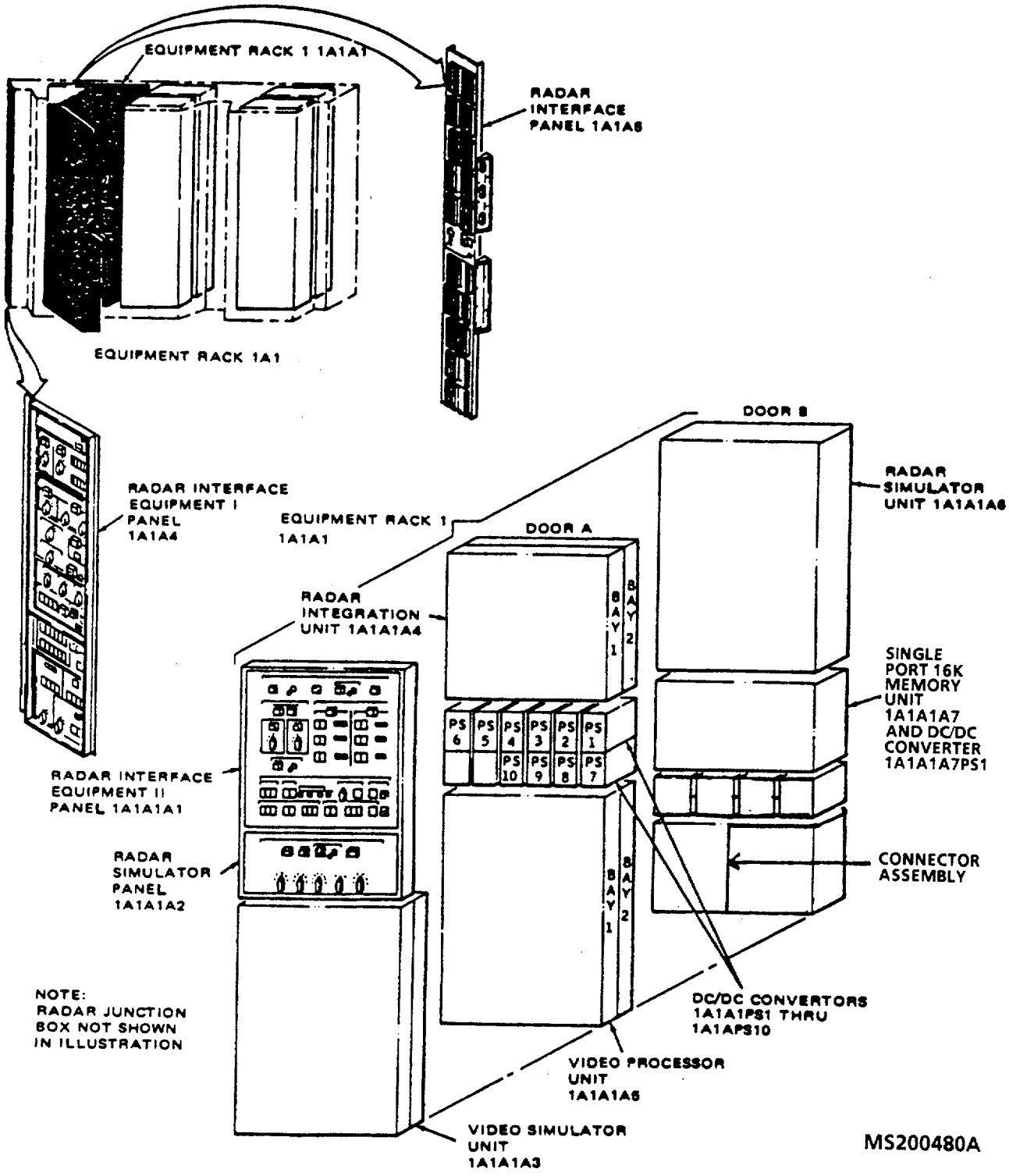

Figure 5-1. Radar Interface Equipment Major Units and Assemblies