

# **PAL III SYMBOLIC ASSEMBLER PDP-8 PROGRAMMING MANUAL**

For additional copies order No. DEC-08-ASAC-D from Program Library,  
Digital Equipment Corporation, Maynard, Massachusetts Price \$1.00

1st Printing August 1965  
2nd Printing Rev June 1967  
3rd Printing November 1967  
4th Printing Rev May 1968  
5th Printing Printing October 1968  
6th Printing February 1969

Copyright © 1965 by Digital Equipment Corporation  
1967  
1968  
1969

Instruction times, operating speeds and the like are included in this manual for reference only; they are not to be taken as specifications.

The following are registered trademarks of Digital Equipment Corporation, Maynard, Massachusetts:

DEC  
FLIP CHIP  
DIGITAL

PDP  
FOCAL  
COMPUTER LAB

## PREFACE

The PDP-8 comes to the user complete with an extensive selection of system programs and routines making the full data processing capability of the new computer immediately available to each user, eliminating many commonly experienced initial programming delays.

The programs described in these abstracts come from two sources, past programming effort on the PDP-5 computer, and present and continuing programming effort on the PDP-8. Thus the PDP-8 programming system takes advantage of the many man-years of program development and field testing by PDP-5 users.

Although in many cases PDP-8 programs originated as PDP-5 programs, all utility and functional program documentation is issued in a new, recursive format introduced with the PDP-8.

Programs written by users of either the PDP-5 or the PDP-8 and submitted to the users' library (DECUS - Digital Equipment Corporation Users' Society) are immediately available to PDP-8 users.

Consequently, users of either computer can take immediate advantage of the continuing program developments for the other.



# CONTENTS

<u>Chapter</u>		<u>Page</u>
1	INTRODUCTION .....	1-1
2	ILLUSTRATIONS OF PDP-8 ASSEMBLER FEATURES .....	2-1
	The Location Counter .....	2-1
	Coding Illustrations .....	2-1
3	THE SOURCE LANGUAGE .....	3-1
	The Character Set .....	3-1
	Letters .....	3-1
	Digits .....	3-1
	Punctuation Characters .....	3-1
	Ignored Characters .....	3-2
	Illegal Characters .....	3-2
	Elements .....	3-2
	Number .....	3-2
	Symbol .....	3-3
	Parameter Assignments .....	3-3
	Symbol Definition .....	3-4
	Expressions .....	3-5
	Current Address Indicator .....	3-8
	Comments .....	3-9
	Pseudo-Instructions .....	3-9
4	PROGRAM PREPARATION AND ASSEMBLER OUTPUT .....	4-1
	Program Tape .....	4-1
5	OPERATING INSTRUCTIONS .....	5-1
	Summary .....	5-2
6	SYMBOL TABLE ALTERATION .....	6-1