

253031

UNIVERSITY OF
W.A.
LIBRARY

Q 371.39445
1983

PLATO

USER'S GUIDE

~~LIBRARY
UNIVERSITY OF W.A.
NOT TO BE
BORROWED~~

LIST OF EFFECTIVE PAGES

New features, as well as changes, deletions, and additions to information in this manual, are indicated by bars in the margins or by a dot near the page number if the entire page is affected. A bar by the page number indicates pagination rather than content has changed.

PAGE	REV	PAGE	REV	PAGE	REV	PAGE	REV	PAGE	REV
Front Cover	-	2-16	D	3-49	D	4-52	D	4-111	D
Title Page	-	2-17	D	3-50	D	4-53	D	4-112	D
ii	D	2-18	D	3-51	D	4-54	D	4-113	D
iii	D	2-19	D	3-52	D	4-55	D	4-114	D
iv	D	2-20	D	3-53	D	4-56	D	4-115	D
v	D	2-21	D	Divider	-	4-57	D	4-116	D
vi	D	2-22	D	4-i	D	4-58	D	4-117	D
vii	D	2-23	D	4-ii	D	4-59	D	4-118	D
viii	D	2-24	D	4-1	D	4-60	D	4-119	D
ix	D	Divider	-	4-2	D	4-61	D	4-120	D
x	D	3-i/3-ii	D	4-3	D	4-62	D	4-121	D
xi	D	3-1	D	4-4	D	4-63	D	4-122	D
Divider	-	3-2	D	4-5	D	4-64	D	4-123	D
1-i/1-ii	D	3-3	D	4-6	D	4-65	D	4-124	D
1-1	D	3-4	D	4-7	D	4-66	D	4-125	D
1-2	D	3-5	D	4-8	D	4-67	D	4-126	D
1-3	D	3-6	D	4-9	D	4-68	D	4-127	D
1-4	D	3-7	D	4-10	D	4-69	D	4-128	D
1-5	D	3-8	D	4-11	D	4-70	D	4-129	D
1-6	D	3-9	D	4-12	D	4-71	D	4-130	D
1-7	D	3-10	D	4-13	D	4-72	D	4-131	D
1-8	D	3-11	D	4-14	D	4-73	D	4-132	D
1-9	D	3-12	D	4-15	D	4-74	D	4-133	D
1-10	D	3-13	D	4-16	D	4-75	D	4-134	D
1-11	D	3-14	D	4-17	D	4-76	D	4-135	D
1-12	D	3-15	D	4-18	D	4-77	D	Divider	-
1-13	D	3-16	D	4-19	D	4-78	D	5-i/5-ii	D
1-14	D	3-17	D	4-20	D	4-79	D	5-1	D
1-15	D	3-18	D	4-21	D	4-80	D	5-2	D
1-16	D	3-19	D	4-22	D	4-81	D	5-3	D
1-17	D	3-20	D	4-23	D	4-82	D	5-4	D
1-18	D	3-21	D	4-24	D	4-83	D	5-5	D
1-19	D	3-22	D	4-25	D	4-84	D	5-6	D
1-20	D	3-23	D	4-26	D	4-85	D	5-7	D
1-21	D	3-24	D	4-27	D	4-86	D	5-8	D
1-22	D	3-25	D	4-28	D	4-87	D	5-9	D
1-23	D	3-26	D	4-29	D	4-88	D	5-10	D
1-24	D	3-27	D	4-30	D	4-89	D	5-11	D
1-25	D	3-28	D	4-31	D	4-90	D	5-12	D
1-26	D	3-29	D	4-32	D	4-91	D	5-13	D
1-27	D	3-30	D	4-33	D	4-92	D	5-14	D
1-28	D	3-31	D	4-34	D	4-93	D	5-15	D
Divider	-	3-32	D	4-35	D	4-94	D	5-16	D
2-i/2-ii	D	3-33	D	4-36	D	4-95	D	5-17	D
2-1	D	3-34	D	4-37	D	4-96	D	5-18	D
2-2	D	3-35	D	4-38	D	4-97	D	5-19	D
2-3	D	3-36	D	4-39	D	4-98	D	5-20	D
2-4	D	3-37	D	4-40	D	4-99	D	5-21	D
2-5	D	3-38	D	4-41	D	4-100	D	5-22	D
2-6	D	3-39	D	4-42	D	4-101	D	5-23	D
2-7	D	3-40	D	4-43	D	4-102	D	5-24	D
2-8	D	3-41	D	4-44	D	4-103	D	5-25	D
2-9	D	3-42	D	4-45	D	4-104	D	5-26	D
2-10	D	3-43	D	4-46	D	4-105	D	5-27	D
2-11	D	3-44	D	4-47	D	4-106	D	5-28	D
2-12	D	3-45	D	4-48	D	4-107	D	5-29	D
2-13	D	3-46	D	4-49	D	4-108	D	5-30	D
2-14	D	3-47	D	4-50	D	4-109	D	5-31	D
2-15	D	3-48	D	4-51	D	4-110	D	5-32	D

PAGE	REV	PAGE	REV	PAGE	REV	PAGE	REV	PAGE	REV
5-33	D								
5-34	D								
5-35	D								
5-36	D								
5-37	D								
5-38	D								
5-39	D								
5-40	D								
5-41	D								
Divider	-								
A-i/A-ii	-								
A-1	D								
A-2	D								
A-3	D								
A-4	D								
A-5	D								
A-6	D								
A-7	D								
A-8	D								
A-9	D								
A-10	D								
A-11	D								
A-12	D								
A-13	D								
A-14	D								
A-15	D								
A-16	D								
A-17	D								
A-18	D								
A-19	D								
A-20	D								
Divider	-								
B-1	D								
B-2	D								
B-3	D								
B-4	D								
B-5	D								
B-6	D								
B-7	D								
B-8	D								
B-9	D								
B-10	D								
B-11	D								
B-12	D								
B-13	D								
B-14	D								
B-15	D								
B-16	D								
B-17	D								
B-18	D								
B-19	D								
B-20	D								
Index-1	D								
Index-2	D								
Index-3	D								
Index-4	D								
Index-5	D								
Index-6	D								
Index-7	D								
Comment Sheet	D								
Inside Back	-								
Cover	-								
Back Cover	-								

PREFACE

DEFINITION

CONTROL DATA® PLATO® products include instructional development and delivery services through terminals connected to a CDC® CYBER computer, instructional delivery through microcomputers using flexible disks, and multi-media instructional packages.

AUDIENCE AND ORGANIZATION

You can use the PLATO User's Guide as an orientation to PLATO products and services or as a comprehensive reference manual.

It is organized according to the three PLATO user types: student, instructor, and author. Students use PLATO course materials. Instructors assign students to courses, organize or modify courses to meet their own needs, and monitor student progress. Authors prepare new lessons, courses, and curricula.

General reference information is contained in the appendices located at the end of the manual.

The information contained in this manual is accurate and complete as of PLATO software release 30.

RELATED PUBLICATIONS

Refer to the following publications for additional information on features, software, and equipment discussed in this manual.

<u>Control Data Publication</u>	<u>Publication Number</u>
Author and Instructor References:	
PLATO Author Language Reference Manual	97405100
PLATO Author Language Instruction Formats	97406600
PLATO Learning Management Instructor's Guide	97406300B
PLATO Learning Management Author's Guide	97406200B
Control Data 110 Instructional Disk	76773000
Technical/Mechanical Standards for Computer-Based Courseware	76360818D
PLATO Course List	202,321B
PLATOSCRIBE™ User's Guide	41620130

Control Data Publication

Publication Number

Equipment:

CDC 721 Operator's Guide/Installation Instructions	62940019
CDC 721-X0 Display Terminal	62940020
Control Data 110 Microcomputer System Owner's Manual	62940053
110 Owner's Manual, Volume 1, Customer Planning Guide	62940070
110 Owner's Manual, Volume 2, Installation	62940071
110 Owner's Manual, Volume 3, General Operations	62940072
110 Owner's Manual, Volume 4, Maintenance	62940073
4003-2088/209 Graphic Printer Operator's Guide/Reference Manual	62949200D

Software:

Control Data 110 System Software User's Manual	62940025D
Three-Ring Binder (with Digital Research)	60085900
An Introduction to CP/M Features and Facilities (Digital Research)	62940028
CP/M 2.2 Alteration Guide (Digital Research)	62940026
CP/M 2.2 Interface Guide (Digital Research)	62940027
CP/M 2.2 User's Guide (Digital Research)	62940023
CP/M Assembler (ASM) User's Guide (Digital Research)	62940029
CP/M Dynamic Debugging Tool (DDT) User's Guide (Digital Research)	62940030
C-Basic (Version 2) Reference Manual (Compiler Systems, Inc.)	62940021
PASCAL/M User's Reference Manual (Sorcim)	62940022

These publications are available through the nearest Control Data Corporation sales office or the Literature Distribution Services Center, 308 North Dale Street, St. Paul, Minnesota, 55103.

DISCLAIMER

PLATO features are intended for use only as described in this document. Control Data cannot be responsible for the proper functioning of undocumented features.

CONTENTS

<p>1. INTRODUCTION 1-1</p> <p>Definition 1-1</p> <p>User Categories 1-2</p> <p style="padding-left: 20px;">Student 1-2</p> <p style="padding-left: 20px;">Instructor 1-3</p> <p style="padding-left: 20px;">Author 1-3</p> <p>PLATO Delivery Options 1-3</p> <p>Control Data Terminals 1-4</p> <p style="padding-left: 20px;">Terminal Controls 1-6</p> <p style="padding-left: 20px;">IST and Viking Keyboards 1-8</p> <p>Control Data Microcomputers 1-10</p> <p style="padding-left: 20px;">Micro PLATO Station 1-12</p> <p style="padding-left: 20px;">Control Data 110 1-12</p> <p style="padding-left: 20px;">Disk Drive Controls 1-13</p> <p style="padding-left: 20px;">Master Flexible Disk Drive 1-14</p> <p>New User Registration 1-15</p> <p style="padding-left: 20px;">Using a Communications Network 1-15</p> <p style="padding-left: 20px;">Network User Registration 1-16</p> <p style="padding-left: 20px;">Starting a PLATO Session 1-17</p> <p style="padding-left: 20px;">Ending a PLATO Session 1-26</p> <p style="padding-left: 40px;">Changing Your Password 1-26</p> <p style="padding-left: 40px;">Orienting New Users 1-27</p> <p style="padding-left: 20px;">Microcomputer User Registration 1-28</p> <p>2. USING STUDENT FEATURES 2-1</p> <p>Introduction 2-1</p> <p>Curriculum Structures 2-1</p> <p>Taking PLATO Lessons 2-3</p> <p>Studying on the Network 2-4</p> <p style="padding-left: 20px;">Indexed Lessons 2-5</p> <p style="padding-left: 20px;">PLATO Learning Management 2-6</p> <p style="padding-left: 20px;">Requesting Help 2-9</p> <p style="padding-left: 40px;">Help within a Lesson 2-9</p> <p style="padding-left: 40px;">Help from Your Instructor 2-10</p> <p style="padding-left: 20px;">Commenting on Lessons (TERM-comment) 2-15</p> <p style="padding-left: 20px;">Communicating with Group Members 2-15</p> <p>Handling Problems 2-16</p> <p style="padding-left: 20px;">Communication Errors 2-16</p> <p style="padding-left: 20px;">Lesson Execution Errors 2-18</p> <p style="padding-left: 20px;">Messages You Might Receive 2-18</p> <p>Helpful Tools 2-19</p> <p style="padding-left: 20px;">Checking the Time 2-19</p> <p style="padding-left: 20px;">Doing Mathematical Calculations 2-19</p> <p style="padding-left: 20px;">Additional Student Options 2-20</p> <p>Studying on Control Data Microcomputers 2-21</p> <p style="padding-left: 20px;">Controlling Your Progress 2-21</p>	<p>PLATO Courses 2-23</p> <p>Ending Your Session 2-24</p> <p>3. USING INSTRUCTOR FEATURES 3-1</p> <p>Introduction 3-1</p> <p>Using Network Courses 3-1</p> <p style="padding-left: 20px;">PLATO Facilities Display 3-1</p> <p style="padding-left: 20px;">Using AIDS 3-4</p> <p style="padding-left: 20px;">Using the PLATO Group 3-9</p> <p style="padding-left: 40px;">Group Data 3-10</p> <p style="padding-left: 40px;">Group Security 3-12</p> <p>Group Operations 3-16</p> <p style="padding-left: 20px;">Registering Students 3-16</p> <p style="padding-left: 20px;">Deleting Students 3-16</p> <p style="padding-left: 20px;">Deleting Individual Students 3-16</p> <p style="padding-left: 20px;">Deleting All Students 3-16</p> <p style="padding-left: 20px;">Listing All Group Members 3-17</p> <p style="padding-left: 20px;">Inspecting/Changing Student Records 3-17</p> <p style="padding-left: 40px;">Leaving a Message 3-17</p> <p style="padding-left: 20px;">Using the PLATOSCRIBE Router ("s/subscribe") 3-18</p> <p style="padding-left: 20px;">Using Your Account 3-19</p> <p style="padding-left: 20px;">Reviewing and Studying Lessons 3-22</p> <p style="padding-left: 20px;">PLATO Courses and Curricula 3-23</p> <p style="padding-left: 40px;">Designing a Curriculum 3-25</p> <p style="padding-left: 40px;">Instructional Management Tools 3-26</p> <p style="padding-left: 40px;">Using Datafiles 3-35</p> <p>Additional Instructor Options 3-37</p> <p style="padding-left: 20px;">Monitoring Group Members 3-37</p> <p style="padding-left: 20px;">Specifying Group Data Collection 3-37</p> <p style="padding-left: 20px;">Templating Records 3-37</p> <p style="padding-left: 20px;">Copying Records from Another Group 3-38</p> <p style="padding-left: 20px;">Creating Instructor Records 3-39</p> <p style="padding-left: 20px;">Managing Personal Notes 3-40</p> <p style="padding-left: 20px;">Using Notes 3-40</p> <p style="padding-left: 20px;">Using Interactive Communications 3-41</p> <p style="padding-left: 20px;">Requesting Prints 3-41</p> <p style="padding-left: 20px;">Receiving Help 3-41</p> <p style="padding-left: 20px;">Giving Help 3-42</p> <p>Using Microcomputer Courses 3-43</p> <p style="padding-left: 20px;">Instructional Management Tools 3-43</p> <p style="padding-left: 20px;">The PLATO Router ("mprouter") 3-43</p> <p style="padding-left: 20px;">Using the PLATO Router 3-44</p> <p style="padding-left: 20px;">Using PLATO Router Options 3-47</p> <p style="padding-left: 40px;">See or Edit a Student's Record 3-47</p>
--	--

Dataset Files	4-118	Assigning Access Options	5-11
Nameset Files	4-118	Keeping Access Lists	
Code Files	4-118	Up-to-Date	5-11
Using Advanced Author Options	4-119	Allowing/Disallowing System Access	5-12
TERM-pnote	4-119	Maintaining File Security	5-12
Setting an Alarm	4-119	Default Security Codes	5-12
Using an Automatic Sign-on	4-119	Changing File Security	5-14
Using Author TERMS	4-120	Managing File Space	5-16
TERM-cursor	4-120	Creating Files	5-16
TERM-grid	4-120	Destroying Files	5-17
TERM-step	4-120	Renaming Files	5-17
TERM-charset	4-121	Making Another Copy of a File	5-17
Additional Security Options	4-122	Lengthening and Reorganizing Files	5-17
Additional Options	4-123	Shortening Files	5-18
Preparing Lessons for Microcomputer		Copying the Contents of a File	5-18
Users	4-125	Changing General File Information	5-18
Routers Available for Flexible		Inspecting File Information	5-20
Disks	4-126	File Management Tools	5-20
Using the PLATO Router ("mprouter")	4-127	Displaying File Information	5-21
Disk Preparation	4-127	Listing Files in Your Account	5-22
Author Options	4-129	Listing Archived Files in Your	
Editing the Lesson Catalog	4-129	Account	5-22
Preparing Private and		Reviewing All File Operations	5-23
Public Disks	4-130	Inspecting File Data	5-24
Lesson Sequencing	4-130	Making a Leslist of Account	
Copying Student Data	4-131	Files	5-24
The PLATOSCRIBE Router	4-131	Listing the Last Editors of	
Using Your Own Router	4-132	Files	5-25
Using Disk Duplication Services	4-133	Listing Current Account Users	5-25
Using Micro PLATO Language		Report Generator Options	5-25
Lessons on a CYBER System	4-133	Group Records Report Generator Options	5-28
Using the Micro PLATO Language	4-134	Archiving Files	5-29
Micro PLATO Language Levels	4-134	Transmitting Files to CYBERNET Services	5-30
Level Compatibility	4-135	Controlling Print Access	5-31
Choosing Capabilities	4-135	Using Interaccount Options	5-32
File Security Using the Micro		Using Network Options	5-32
PLATO Language	4-135	Preparing to Use Network Features	5-32
		Registering Users on Your	
		System and Other Systems	5-36
		Assigning User Access	5-37
		Intersystem File Security	5-38
		Understanding Network Transfer	
		Units (NTUs)	5-39
		NTU Sizes and Priorities	5-39
		NTU Accounting	5-39
		NTU Controls	5-40
		Protecting PLATO Files	5-41
		Installing Backups	5-41
		How to Inspect Files for Damage	5-41
		Requesting a Backup	5-41
5. USING ACCOUNT OPTIONS	5-1		
Introduction	5-1		
General Account Information	5-1		
Using Your PLATO Account	5-3		
Account Options	5-3		
The Account Directory	5-5		
Maintaining Account Security	5-6		
Using Security Codewords	5-6		
Using an Account Access List	5-8		
Creating an Account Access List	5-8		
Registering Users in the			
Account Access List	5-9		

APPENDICES

A. IST AND VIKING KEYBOARDS		A-1 Less Frequently Used IST and Viking Function Keys	
The IST Keypad	A-2	Access Characters Used as Accent Marks	A-7
Character Keys	A-2	Symbols Used When Writing Code	A-16
Function Keys	A-2	Unique Viking Function Keys	A-20
The Viking Keypad	A-3		
Character Keys	A-3		
Function Keys	A-4		
Frequently Used IST and Viking Function Keys	A-5		
		B. GLOSSARY	B-1

INDEX

FIGURES

1-1 Information Systems Terminal (IST)	1-4	3-6 Security Code Settings	3-14
1-2 IST-II and IST-III	1-4	3-7 Group Operations	3-15
1-3 Viking 721 Terminal	1-5	3-8 Account Options	3-20
1-4 IST-III Keyboard	1-8	3-9 Account Directory	3-21
1-5 Viking Keyboard	1-8	3-10 A PLATO Curriculum	3-23
1-6 Micro PLATO Station	1-10	3-11 A PLATO Curriculum	3-24
1-7 Control Data 110 Using the IST-III	1-11	3-12 Files Associated with a Group	3-29
1-8 Control Data 110 Using the Viking Terminal	1-11	3-13 Instructor File Codewords	3-30
1-9 Disk Drive Controls	1-13	3-14 Curriculum Options	3-31
1-10 "Press NEXT to begin" Message	1-17	3-15 Module List	3-33
1-11 Welcome Display	1-18	3-16 Instructor Options	3-39
1-12 Group Identification	1-19	3-17 Welcome Display	3-44
1-13 Password Selection	1-20	3-18 Password Choice	3-45
1-14 Password Display	1-21	3-19 Instructor Options	3-46
1-15 Sample PLM Curriculum	1-22	3-20 The Student Record	3-47
1-16 Sample Student Index	1-23	3-21 Student Progress Report	3-48
1-17 PLATO Facilities Display	1-24	3-22 Disk Roster	3-49
1-18 Author Mode Display	1-25	3-23 Performance Summary	3-50
2-1 PLATO Curriculum Structure	2-2	3-24 Lesson Summary	3-51
2-2 PLM Curriculum Structure	2-2	3-25 Router and Security Options	3-52
2-3 Examples of PLM and "mrouter" Curricula	2-4	4-1 Author Option Categories	4-2
2-4 Sample Module Index	2-5	4-2 Author Mode Display	4-4
2-5 PLM Course Index	2-7	4-3 Frequently Used Author Options	4-5
2-6 PLM Module Index	2-8	4-4a Example of a Lesson Index	4-8
2-7 Personal Notes Address	2-13	4-4b Example of a Documentor Index	4-9
2-8 Personal Notes Editor	2-14	4-5a Example of a Lesson Directory	4-10
2-9 Course Titles	2-21	4-5b Example of a Documentor Directory	4-11
2-10 Course Index	2-22	4-6 AIDS Title Display	4-13
2-11 The PLATO Course	2-23	4-7 AIDS Index	4-14
3-1 PLATO Facilities	3-2	4-8 AIDS "What PLATO feature?" Option	4-16
3-2 AIDS	3-4	4-9 PLATO Communications Display	4-27
3-3 AIDS Index Displays	3-6	4-10 File Names and Descriptions of Published Courseware Notes Files	4-28
3-4 AIDS "What PLATO feature" Arrow	3-8	4-11 Index of Published Courseware Notes Files	4-29
3-5 Group Directory	3-10	4-12 Notes Index	4-30

4-13	Sequencer Editing Options	4-32	4-47	Access Options	4-108
4-14	Notes Files Sequencer	4-33	4-48	Option Descriptions	4-109
4-15	Personal Notes Display	4-35	4-49	Individual Option Description	4-110
4-16	Block Listing Display	4-37	4-50	Descriptions for Sets of Options	4-111
4-17	Notes Editor	4-39	4-51	Option Assignment	4-112
4-18	Notes File Options	4-44	4-52	Code Controlling User Access	4-113
4-19	Courseware Catalog Options	4-47	4-53	Author Options in "mprinter"	4-128
4-20	Course Catalog Title Index	4-48	5-1	Account Options	5-3
4-21	Course Information	4-49	5-2	The Account Directory	5-5
4-22	Course Description	4-50	5-3	Account Access Options	5-9
4-23	Directory of PLATO Authors	4-52	5-4	Account Access Categories	5-10
4-24	Alphabetical PLATO Author List	4-53	5-5	File Management Options	5-14
4-25	PLATO User List Options	4-54	5-6	File Data	5-21
4-26	Documentor Section Index	4-57	5-7	Author Information	5-27
4-27	Print Requests	4-60	5-8	Account Directory with Network Features	5-33
4-28	Author and Lesson Information	4-63	5-9	Network Options	5-34
4-29	Block Listing	4-64	A-1	Control Data IST-III Keyboard	A-2
4-30	Security Codes	4-66	A-2	Control Data Viking Keyboard	A-3
4-31	Block Creation Options	4-69	A-3	IST-III Keyboard Showing All Possible Characters	A-8
4-32	The PLATO Editor	4-72	A-4	Viking Keyboard Showing All Possible Characters	A-9
4-33	Inserting or Changing Text	4-73	A-5	Viking French Keyboard Showing All Possible Characters	A-10
4-34	Moving Forward and Backward	4-75	A-6	Viking German Keyboard Showing All Possible Characters	A-11
4-35	Editing Help	4-76	A-7	Viking Swedish/Finnish Keyboard Showing All Possible Characters	A-12
4-36	Coarse Grid	4-79	A-8	Viking British Keyboard Showing All Possible Characters	A-13
4-37	A PLATO Character	4-80	A-9	Viking Spanish Keyboard Showing All Possible Characters	A-14
4-38	Fine Grid	4-81	A-10	Viking Danish/Norwegian Keyboard Showing All Possible Characters	A-15
4-39	Character Creation Options	4-85			
4-40	Character Design	4-87			
4-41	Multiple Character Assignment	4-90			
4-42	AIDS Character Catalog	4-92			
4-43	Line Character Design Grid	4-94			
4-44	Large Grid Lineset Character Design	4-95			
4-45	Lineset Options	4-96			
4-46	Author Mode Extended Memory Tally	4-102			

TABLES

1-1	Control Data Microcomputer Comparison	1-12	4-2	Functions of Editing Keys for Normal and Large Grids	4-97
2-1	Troubleshooting Procedures	2-17	4-3	Variable Types	4-121
3-1	Curriculum Design Options	3-27	4-4	Variable Formats	4-121
4-1	Editing Directives	4-71	5-1	File Types	5-2

SECTION 1

INTRODUCTION

INTRODUCTION

Definition	1-1	Control Data 110	1-12
User Categories	1-2	Disk Drive Controls	1-13
Student	1-2	Master Flexible Disk Drive	1-14
Instructor	1-3	New User Registration	1-15
Author	1-3	Using a Communications Network	1-15
PLATO Delivery Options	1-3	Network User Registration	1-16
Control Data Terminals	1-4	Starting a PLATO Session	1-17
Terminal Controls	1-6	Ending a PLATO Session	1-26
IST and Viking Keyboards	1-8	Changing Your Password	1-26
Control Data Microcomputers	1-10	Orienting New Users	1-27
Micro PLATO Station	1-12	Microcomputer User Registration	1-28

INTRODUCTION

This section introduces PLATO user types. You should read this section before using PLATO products and before reading other sections of this manual.

DEFINITION

Control Data PLATO products include instructional development and delivery services through terminals connected to a CYBER computer, instructional delivery through microcomputers using flexible disks, and multi-media instructional packages.

This manual introduces and describes PLATO products and services available using Control Data terminals connected to CYBER systems and Control Data microcomputers.

PLATO capabilities are being used in many different environments: schools, universities, hospitals, industries, and businesses throughout the world. Students of all ages, business people, medical professionals, airline pilots, engineers, technicians, secretaries, salespeople, accountants, bankers, and bank tellers all use PLATO instruction daily to learn new concepts, facts, and procedures; collect data; review mastered materials; simulate complex, dangerous, or expensive laboratory tests; or take qualifying, competency-based, or course completion examinations.

Individualized instruction (frequent testing, frequent and detailed feedback, alternative learning paths, mastery learning, objective-based instruction) is most frequently chosen for PLATO delivery because its presentation capabilities are broad enough to support these demanding instructional methods. But, the capability to support all methods, old and new, has been and will be retained.

PLATO features are constantly being evaluated, upgraded, and expanded. Three times each year Control Data incorporates additional capabilities suggested by education and training researchers, as well as PLATO users. As a PLATO user, you can rely upon PLATO features to meet your needs your way, today and tomorrow.

USER CATEGORIES

Each PLATO user is classed as one of three user types. Each type of user is treated somewhat differently. The three user types are:

- Students.
- Instructors.
- Authors.

A range of options and features is available to users in each of these categories. The specific options and features available to any individual can vary according to individual needs. Some people can use all the features available to their user category, while others can use only some.

The sets of features available in each user category overlap. This allows instructors to access student and instructor features, and allows authors to access student, instructor, and author features. (Refer to *Orienting New Users* later in this section for recommendations on orienting new users.)

Students can use fewer features and options than other users. They require minimal instruction on how to use PLATO features because they receive considerable guidance. Instructors can use more features than students, and therefore require more training. Authors can use the greatest number of features and options and therefore require the most time to learn about PLATO capabilities.

The following paragraphs describe each of the three PLATO user types.

STUDENT

A PLATO student typically studies a lesson or set of lessons called a curriculum. A PLATO student is not always a student in school but can be anyone using PLATO services for instruction or information. The student user is guided to a specific lesson, program, or index. Because careful guidance is provided, many infrequent users are student users. Students are taken directly to what they want to see or use (curricula, reports, data summaries, or instructional evaluation tools). A user can be identified as a student when a predetermined set of lessons, features, or programs is needed.

A PLATO record is kept for most students. A student's record stores various kinds of information such as the name of the lesson(s) being studied, the cumulative number of study hours, and test scores.

Because detailed records aren't needed for all students, a special kind of student record was created. It's called a multiple record. A multiple is a student record intended to be shared by a number of people. Multiple records are used frequently to allow people to look over a set of lessons. They are also used for demonstrations.

Because a number of people share a multiple record, data is not maintained. The multiple record treats each student as a first-time user. Information on lessons started and completed, test scores, and the number and length of study sessions is not retained across sessions.

INSTRUCTOR

A PLATO instructor can review lessons, courses, and curricula; enroll and remove students; see information on student performance; and collect summary data. Instructors can also help students when problems arise. They can also organize lessons into curricular groupings suitable to various classes of students, when existing curricula do not exactly meet their needs.

Instructors can work and communicate with other instructors or authors writing or testing new lessons. In addition to their own capabilities, instructors can use all the features students can, and can view lessons and materials as students do.

Some instructors are also account owners or directors. Account owners and directors coordinate and manage the use and allocation of contracted PLATO resources. (For more detailed information on account management, refer to section 5, Using Account Options.)

AUTHOR

A PLATO author develops instructional materials using a Control Data terminal connected by a communications network to a CYBER computer. Materials can be prepared for delivery to a terminal through a communications network or for microcomputer delivery. The languages used are the PLATO Author Language and the Micro PLATO Language, which have been specifically designed for education and for training professionals.

Supporting instructional design and development are PLATO communication features. Group discussions through written notes and responses allow authors to share ideas and experiences, obtain help from PLATO consultants, and keep abreast of new features. Private communications also support program implementation and development.

Authors can also access the same features as students and instructors.

Some authors are also account owners or directors. Refer to section 5, Using Account Options, for more information on account management.

PLATO DELIVERY OPTIONS

PLATO instruction is available on both Control Data microcomputers and terminals connected to CYBER computer systems via various communications networks. Microcomputer users will use the same terminals as users connected to communications networks. Therefore, terminal keyboards and controls are the same for all users. Microcomputer users will have an additional piece of equipment, a flexible disk drive, attached to their terminals.

The remainder of this section orients you to Control Data terminals, their controls and keyboards, and the flexible disk drive.

The sections that follow provide separate instructions on PLATO feature use for microcomputer users and terminal users connected to a CYBER system via a communications network. PLATO users in the last category are often referred to as being "on the network."

CONTROL DATA TERMINALS

The Control Data terminal you are using is one of four types manufactured for use with PLATO instruction. These are the Information Systems Terminal (IST), shown in figure 1-1, the IST-II and III (figure 1-2), and the Viking 721-30 (figure 1-3).* The IST terminals were manufactured exclusively for PLATO use, while the Viking provides additional capabilities.

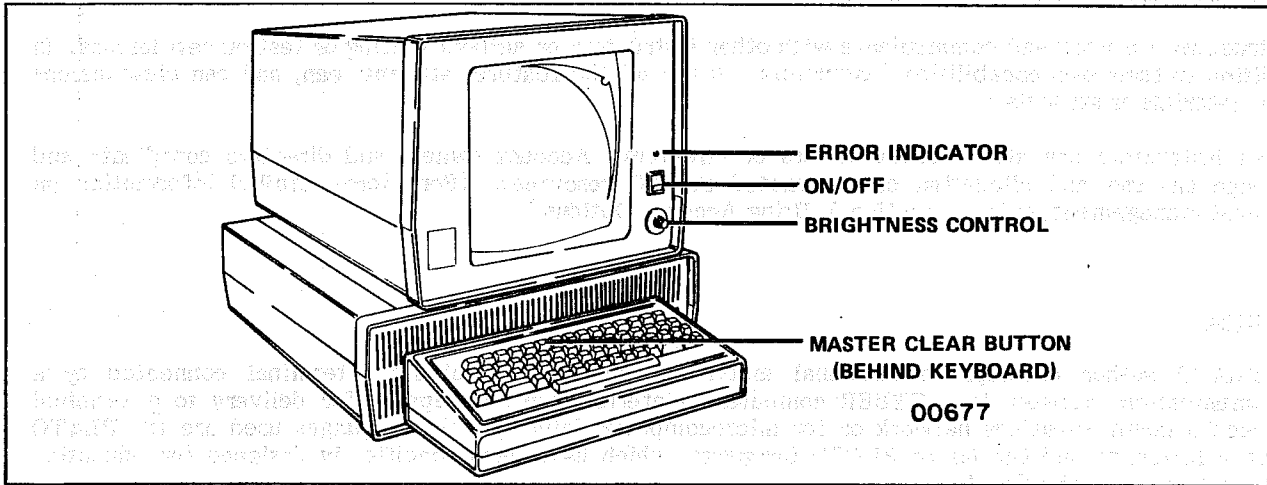


Figure 1-1. Information Systems Terminal (IST)

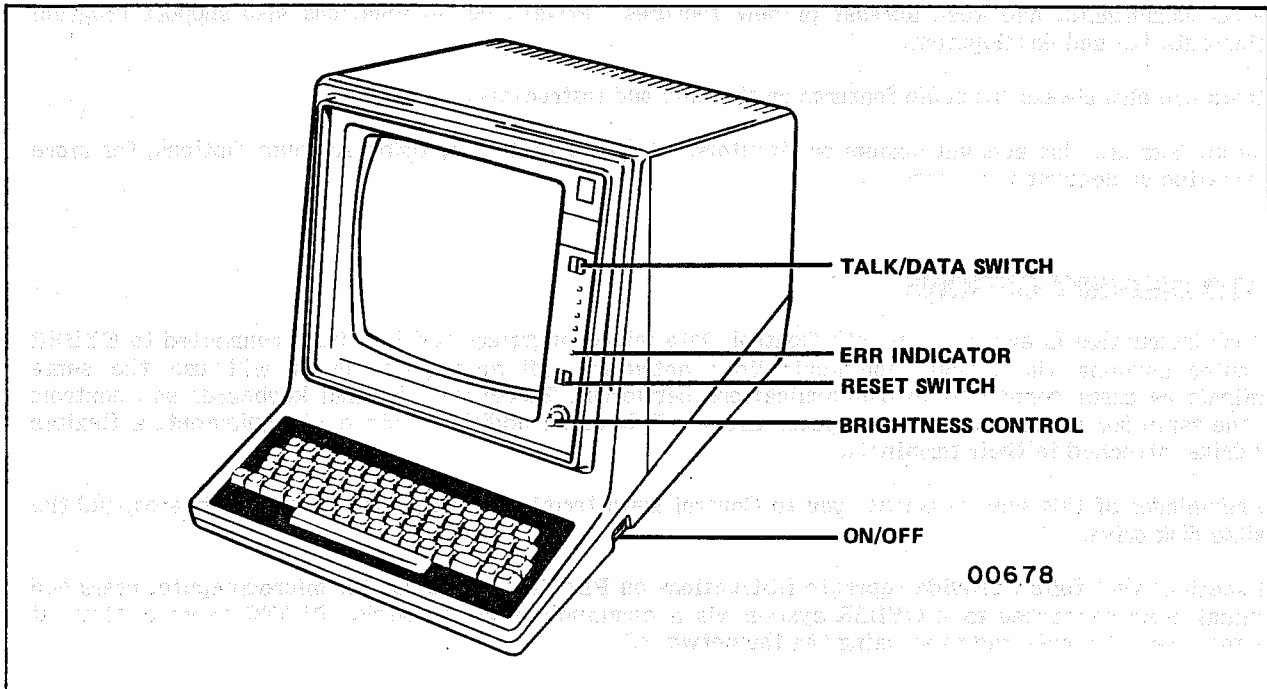


Figure 1-2. IST-II and IST-III

*The Viking 721-30 is the only Viking intended for PLATO use. In this manual, the Viking 721-30 will be referred to as the Viking.

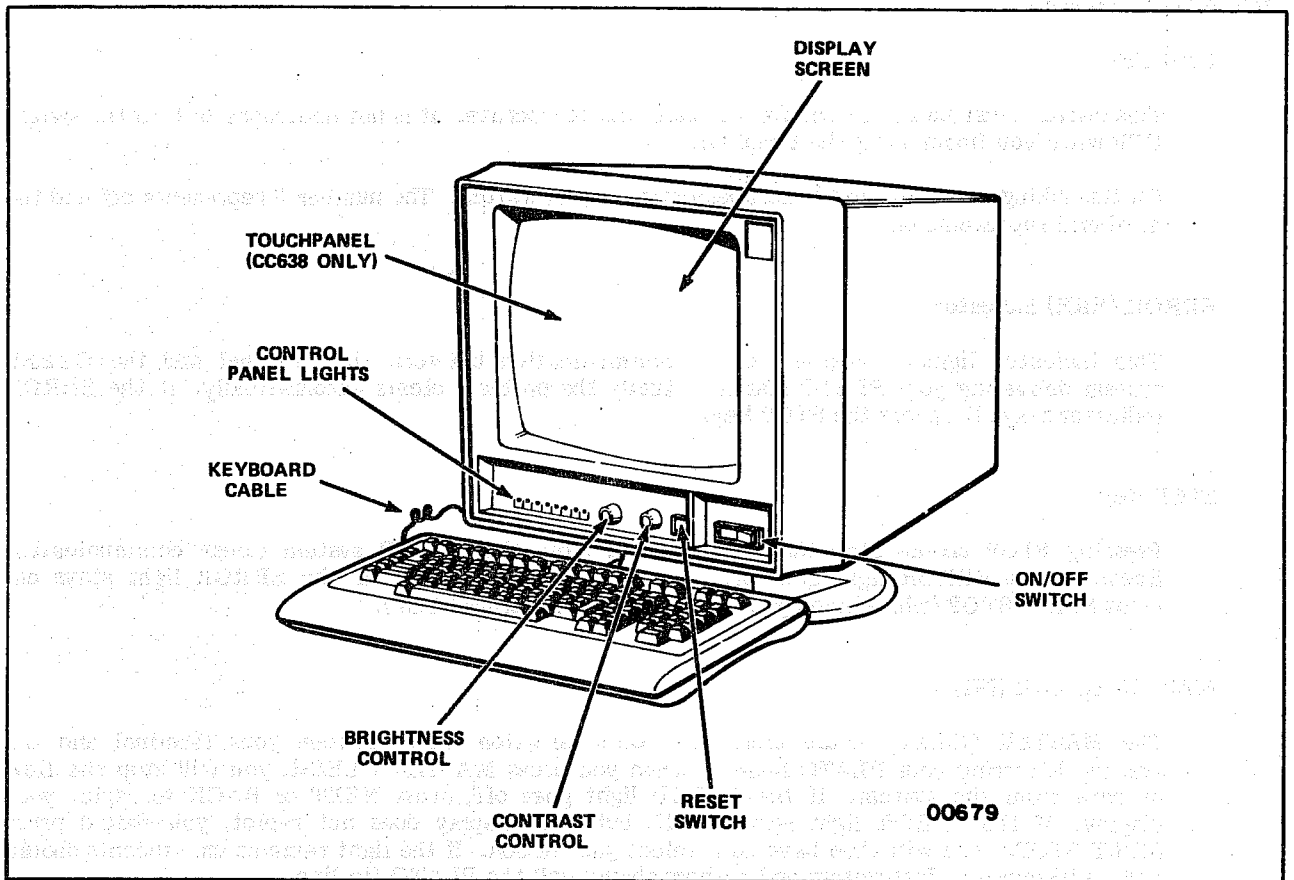


Figure 1-3. Viking 721 Terminal

The Viking conforms to international standards for keyboard layout, and is compatible with data processing applications and PLATO instruction. Some of the advantages to this multipurpose terminal are graphic mode, teletype (TTY) capabilities, and Tektronix 410x emulation.

All terminals have keyboards with character and function keys. Some terminals (IST-III and Viking) have some additional keys to support standard data processing uses. In addition, a 512 x 512 screen with randomly addressable points allows the use of standard and specially designed character and line drawings, partial screen erase, animation, and use of a touch panel.

Each terminal has some major controls which you should review before use. Although you won't use these controls every time you use the terminal, it is important to understand how they work to correct minor problems that might occur.

NOTE

When using a Viking terminal with such additional equipment as a printer on disk drive, be sure to turn the power on for all pieces of equipment and to use a terminator. Do this even if you do not intend to use the printer or disk drive.

TERMINAL CONTROLS

ON/OFF

This switch must be set to ON for the terminal to operate. It is not necessary to turn the switch OFF when you finish using the terminal.

On the Viking, you will note a European style on/off switch. The number 0 represents off and the number 1 represents on.

ERROR (ERR) Indicator

This indicator lights during a loss of communication between the terminal and the CYBER system delivering your PLATO lesson. Usually the problem clears automatically. If the ERROR indicator stays lit, press the STOP key.

STOP Key

Pressing STOP should stop the flow of data from the CYBER system (clear communication lines). If the ERROR light goes off, press NEXT to continue. If the ERROR light stays on, press SHIFT-STOP (while holding the SHIFT key down press STOP).

MASTER CLEAR (IST)

The MASTER CLEAR should clear the communication lines between your terminal and the system delivering your PLATO lesson. When you press MASTER CLEAR, you will stop the flow of data from the system. If the ERROR light goes off, press NEXT or BACK to replot your display. If the ERROR light remains off, but your display does not replot, you should press SHIFT-STOP. You will then have to reselect your lesson. If the light remains on, students should call an instructor. Instructors and authors should call the PLATO Hotline.

RESET (IST-II and III)

The RESET button on an IST-II or III serves as both a short and a long reset. These are described below.

Short RESET

Pressing RESET for less than 3 seconds is called a short reset. This clears communication lines between your terminal and the system delivering your PLATO lesson (the short reset is similar to the MASTER CLEAR on an IST).

If the ERROR light goes off, press NEXT to continue with your lesson. If pressing NEXT does not work, press SHIFT-STOP, which will return you to the Author Mode display. You will then have to sign back on to your lesson. If the ERROR light remains on, try a long reset (described below).

Long RESET

Pressing RESET on an IST-II or III for 5 seconds or longer will completely clear terminal memory. Your screen will be blank and you will have to begin the sign-on procedure from the beginning. (Sign-on procedures are discussed later in this section).

RESET (Viking)

The RESET on a Viking is the same as the long RESET on an IST-II or III. Your terminal memory will be cleared and you will be signed off. You will have to go through the sign-on procedure from the beginning.

M/REL (Viking)

The M/REL button on a Viking will clear communication lines between your terminal and the system delivering your PLATO lesson. Pressing this button will clear your display. (M/REL is similar to the MASTER CLEAR on an IST and a short RESET on a IST-II or III). If the light remains on, press the RESET button on your Viking.

BRIGHTNESS Control

This knob adjusts the brightness of the display to a comfortable viewing level. To increase the intensity, rotate clockwise; to decrease the intensity, rotate counterclockwise.

CONTRAST Control

This knob adjusts the contrast between the display and the text to a comfortable viewing level. To increase the intensity of the display, rotate clockwise; to decrease the intensity, rotate counterclockwise.

CAUTION

If the brightness control is set too high, the display will be out of focus and the life of some internal hardware may be shortened unnecessarily.

IST AND VIKING KEYBOARDS

Most of the time you will use a keyboard to interact with PLATO instruction and services. The IST and Viking keyboards resemble standard typewriter keyboards (figures 1-4 and 1-5 respectively). Like a standard typewriter, they have character, number, and punctuation keys (unshaded keys in the figures). Function keys direct movement from one display image to another or add information to your present display. They are used instead of typing longer instruction and are always represented with capital letters (for example, NEXT, BACK, and HELP are all function keys).

Examples of function key uses are:

To indicate you are finished reading the information on one display and are ready to see another; to go back and reread a display read previously; to see extra information to help you understand something; or to do some problems or exercises.

Which function key you press depends upon the kind of action you want to take. The function keys used most frequently by PLATO lessons are described below.

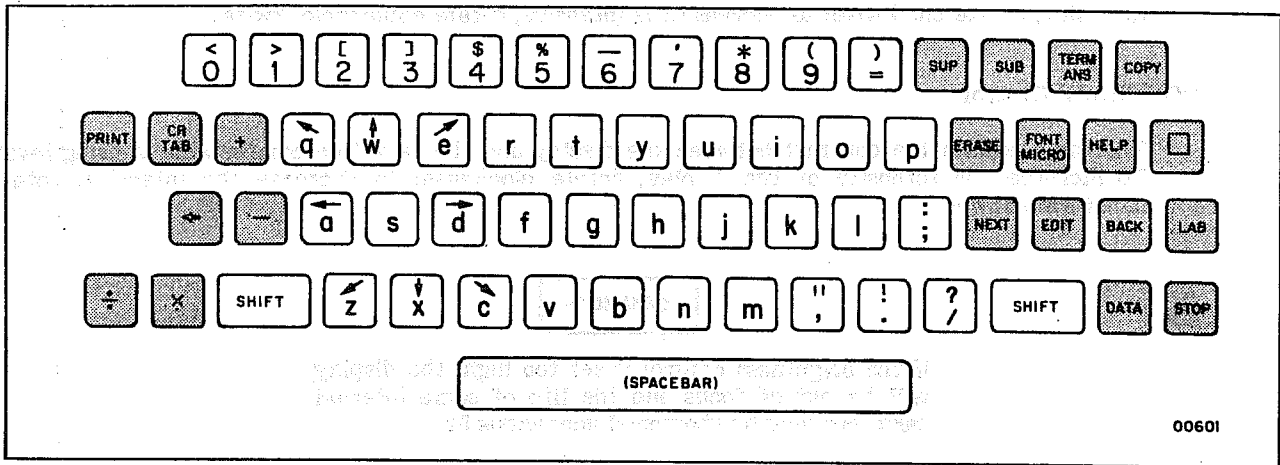


Figure 1-4. IST-III Keyboard

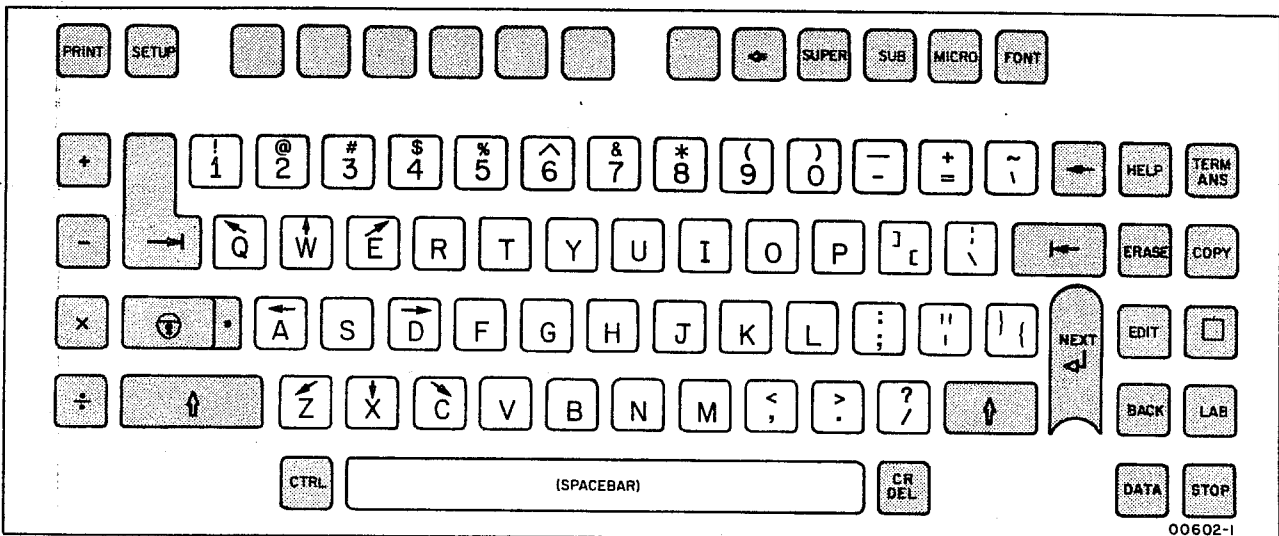


Figure 1-5. Viking Keyboard

NEXT

The **NEXT** key is the most frequently used key. It is located with the function keys on the right of the keyset. Because it is the most frequently used key, it is designed to be easy to find. Pressing **NEXT** indicates you are finished typing an answer to a question, or you are finished reading the information on the display and are ready to see some additional information on the next display. Whenever you are in doubt about what to do next when using **PLATO** instruction, press **NEXT**.

SHIFT

The **SHIFT** key is used to type uppercase alphabetic characters. To type a capital letter, hold the **SHIFT** key down and press the desired character key. (For example, to type the letter **B**, hold the **SHIFT** key down and press **b**.)

The **SHIFT** key is also used to allow the numeric, punctuation, and function keys to have two characters or functions. For example, the number five key (**5**) types the percent (**%**) sign if the **SHIFT** key is held down while pressing the **5** key.

Several keypresses require using the **SHIFT** key and another function key at the same time. These are always marked by a hyphen following the **SHIFT** notation. For example, **SHIFT-NEXT** means: while holding down the **SHIFT** key, press **NEXT**.

SHIFT-STOP

The **SHIFT-STOP** keys are used to stop a lesson or end a **PLATO** session. They are also used to begin a session. To press **SHIFT-STOP**, while holding down the **SHIFT** key, press **STOP**.

ERASE

The **ERASE** key erases all or part of the information you have typed at an arrow. Each time you press **ERASE**, one character is removed from a typed response. To remove a complete word, press **ERASE** while holding down the **SHIFT** key (**SHIFT-ERASE**). Erasing always begins with the last word or character typed.

HELP

The **HELP** key is the first key you should press if you don't understand what to do, or if you need more information than that displayed. "**HELP**" or "**HELP Available**" appears near the bottom of the display when additional information is available.

For more detailed information on the keyboards, refer to appendix A or try the **PLATO** lessons "**Qkeyboard**", "**Qgenintro**", "**Qintro**", or "**Qintro**" for an orientation to the keyboard.

CONTROL DATA MICROCOMPUTERS

The microcomputer you are using is one of three types available from Control Data. These are the CDC Micro PLATO Station (available in 1980), the CDC 110 using an IST-III (available in 1981), and the CDC 110 using the Viking 721-30* (available in 1982). The IST terminals were manufactured exclusively for PLATO use, while the Viking provides additional capabilities discussed under Control Data Terminals earlier. (Figures 1-6, 1-7, and 1-8 show the three Control Data microcomputers.)

Each microcomputer uses a terminal, discussed in the previous section. Rather than being connected to a network, the microcomputer uses a flexible disk drive (Control Data's Flexible Disk Drive Subsystem) to present instruction. Lessons are stored on flexible disks resembling 45-rpm phonograph records in their paper covers. A flexible disk, when placed in the operating disk drive, directs instructional presentations.

These microcomputers may also be used as terminals, without the disk drive. (Disk drives are discussed later in this section.)

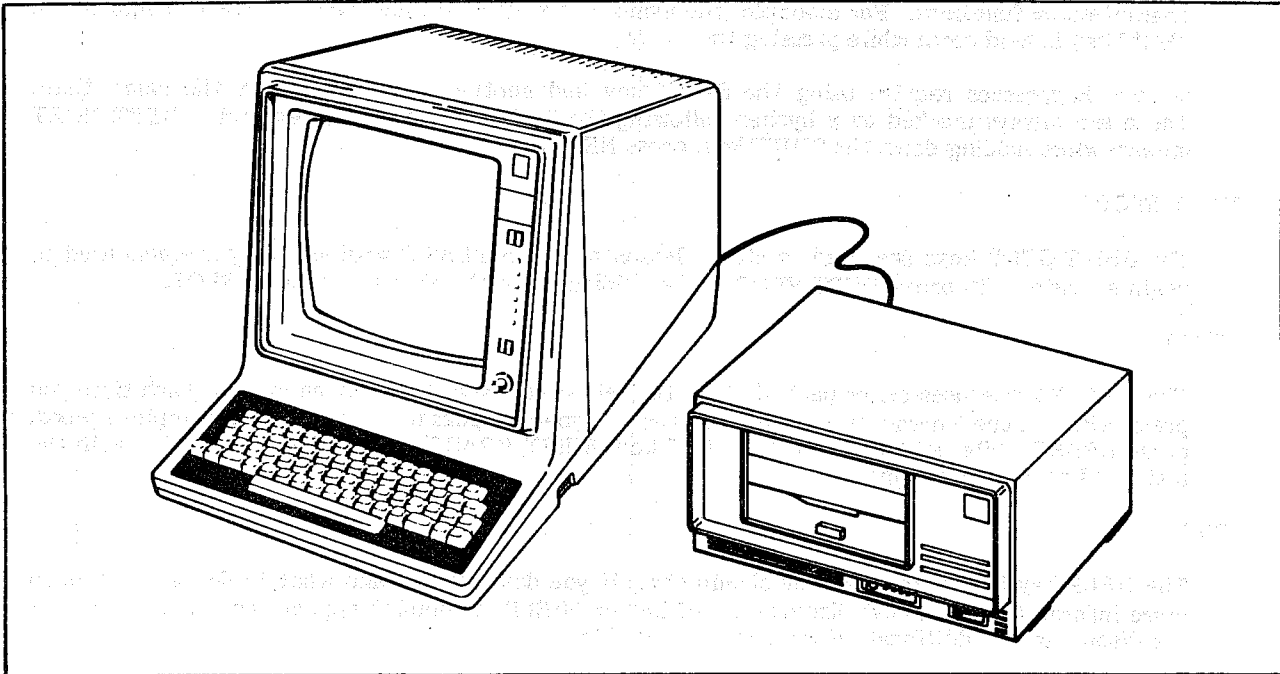


Figure 1-6. Micro PLATO Station

*The Viking 721-30 is the only Viking intended for PLATO use. In this manual, the Viking 721-30 will be referred to as the Viking.

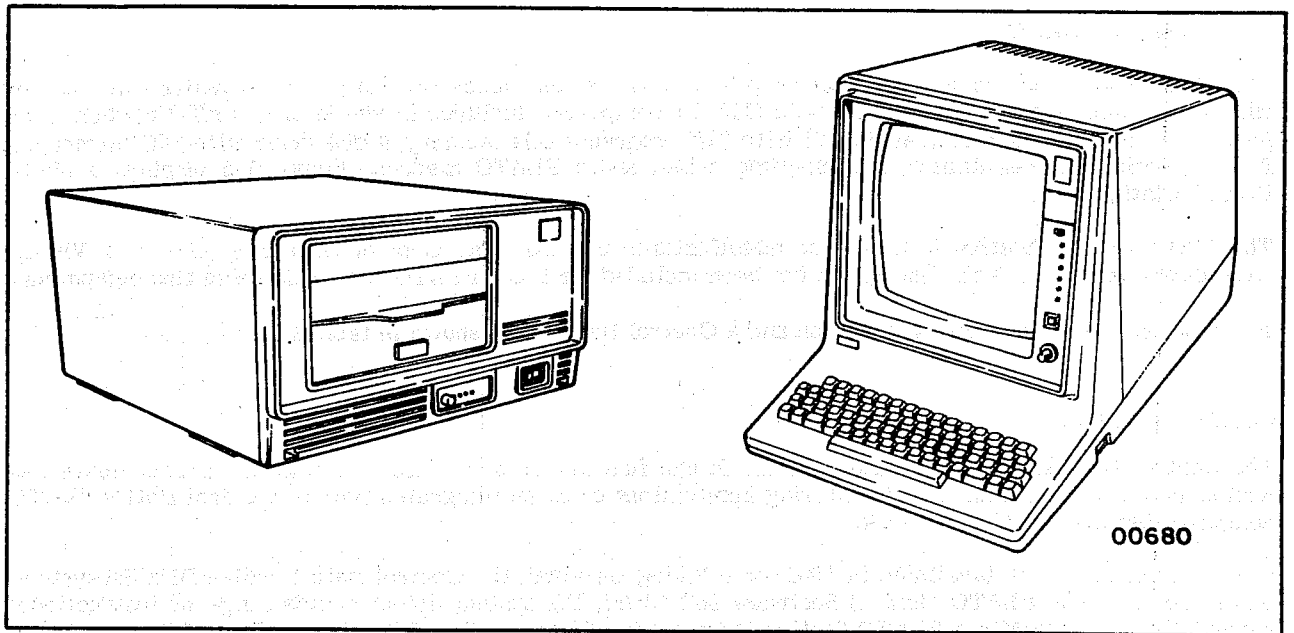


Figure 1-7. Control Data 110 Using the IST-III

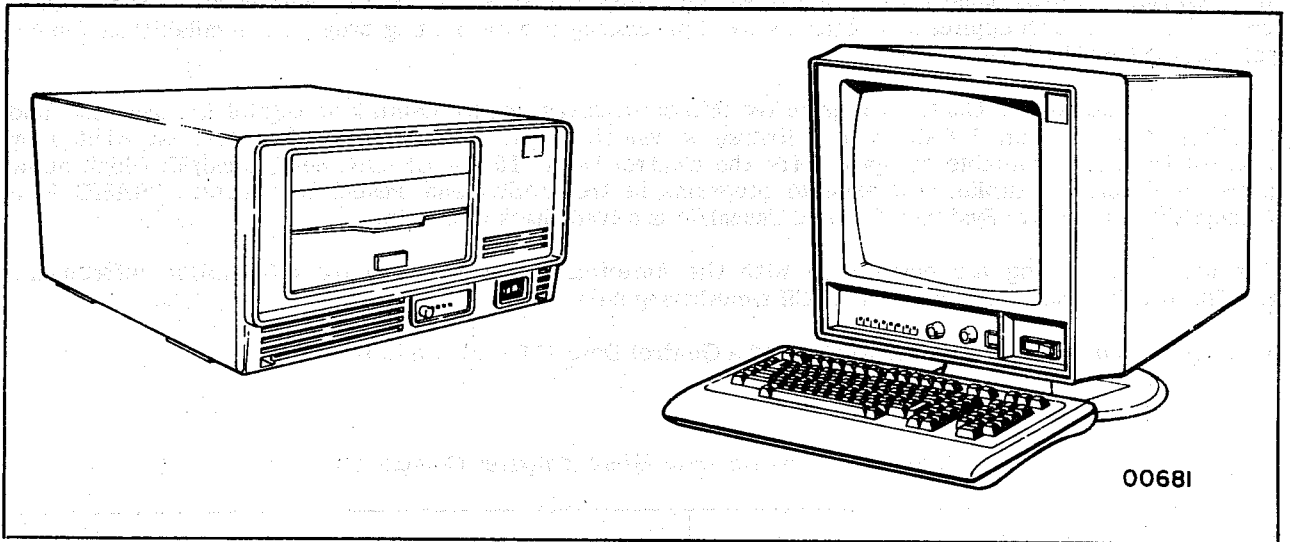


Figure 1-8. Control Data 110 Using the Viking Terminal

MICRO PLATO STATION

The Control Data Micro PLATO Station provides all of the necessary hardware to deliver instruction without the need for communication, to a CYBER computer. Included in the Micro PLATO Station is an Informational Systems Terminal (IST-II) with 32K programmable memory, a disk drive with 16K memory, a PLATO Peripheral Terminator, a connecting cable, and a PLATO modem. Figure 1-6 displays a Micro PLATO Station.

The Micro PLATO Station is no longer manufactured or sold. The Control Data 110 (IST-III or Viking) were developed later. This description has been included for those PLATO users still using this equipment.

A comparison of a Micro PLATO Station and a Control Data 110 is shown in table 1-1.

CONTROL DATA 110

The Control Data 110 is a multi-use system. It can function as a business or education microcomputer, as well as an on-line terminal for timesharing applications or as an integrated part of Control Data's PLATO computer-based education network.

Composed of an IST-III (available in 1981) or a Viking terminal, the Control Data Flexible Disk Subsystem, and licenses to use PLATO Control Software and CP/M, the system offers a wide range of instructional capabilities, like the Micro PLATO Station it succeeds. Figures 1-7 and 1-8 show a Control Data 110 with an IST-III and a Viking terminal respectively. (Control Data terminals are discussed earlier in this section.)

With CP/M, a widely used operating system for microcomputers, users can also choose from a large collection of business applications (such as word processing and accounting programs) available on 8-inch, soft-sector flexible disks.

CP/M, which stands for Control Program for Microprocessors, is a trademark of Digital Research Inc. and is distributed by Control Data with a license to use it on the Control Data 110. Also distributed by Control Data and available as options for the Control Data 110 are CBASIC and Pascal/M, which allow users to develop, compile, and execute programs in the BASIC and Pascal languages. CBASIC is a trademark of Compiler Systems, Inc. and Pascal/M is a trademark of Sorecim.

The IST-III and Viking are compatible with the American Standard Code for Information Interchange (ASCII), which allows their use over ASCII timesharing networks.

A comparison of a Micro PLATO Station and a Control Data 110 is shown in table 1-1.

Table 1-1. Control Data Microcomputer Comparison

Micro PLATO Station	Control Data 110
IST-II with 32K programmable memory	IST-III or Viking with 32K programmable memory
Disk drive with 16K memory	Disk drive with 64K memory
Terminator	Terminator
Cable	Cable
PLATO modem	PLATO modem is an option
	CP/M
	PLATO Control Software

DISK DRIVE CONTROLS

Each microcomputer has some major controls that you should review before use. Although you won't use these controls every time you use the microcomputer, it is important to understand how they work to correct minor problems that might occur. Use this section to identify the microcomputer you will be using and to learn the locations and uses of the controls. Figure 1-9 shows the major controls for the disk drive used by all three Control Data microcomputers. Terminal controls are described earlier in this section. Disk drive controls are described below.

ON/OFF

This switch must be set to ON to operate the disk drive.

Door Open Button

Open the disk drive door by pressing this button.

Door Handle

Once a flexible disk has been inserted, close the disk drive door by pulling this handle down.

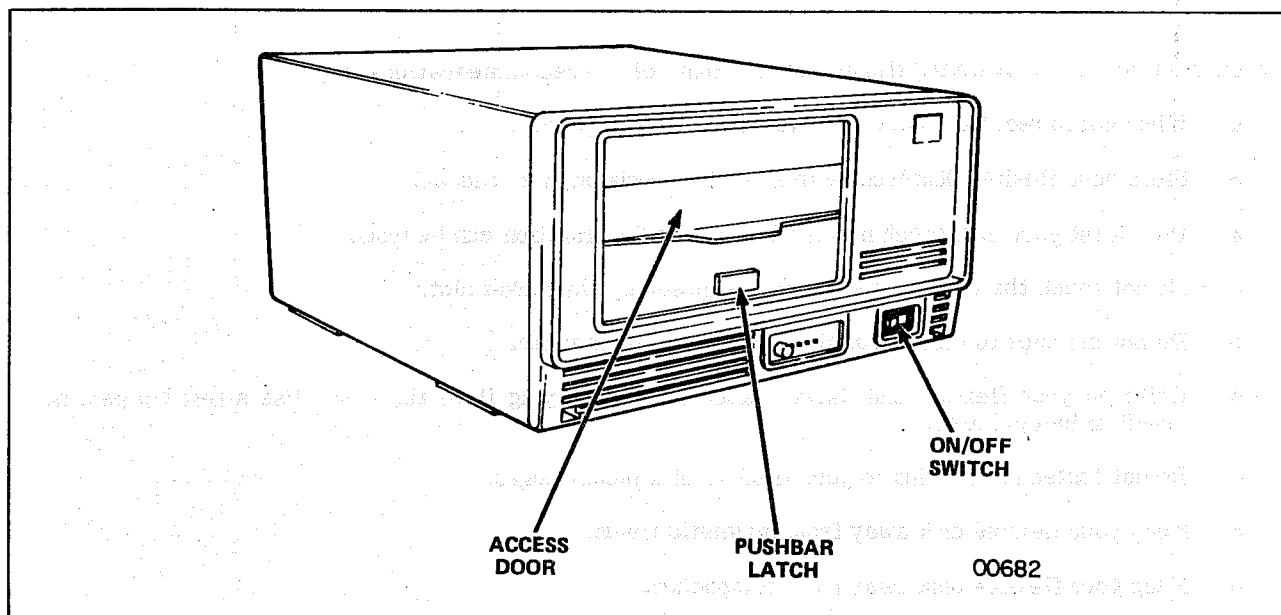


Figure 1-9. Disk Drive Controls

MASTER FLEXIBLE DISK DRIVE

The Control Data Master Flexible Disk Drive is a desk-top flexible disk drive that provides peripheral storage capability for the IST-II, III, and Viking. The disk drive permits instructional delivery without the use of communications to a CYBER computer.

An optional second disk drive, the PLATO Secondary Flexible Disk Drive, can be connected to the PLATO Master Flexible Disk Drive. The secondary disk drive may be stacked on top of the master to conserve space or may be placed alongside of the master. Use of double-sided, double-density disks is permitted with both disk drives.

NOTE

When using a Viking terminal with a disk drive attached, be sure to turn the disk drive power on. Do this even if you are not going to use the disk drive.

You should take care in handling flexible disks. Some of the recommendations are:

- When not in use, keep your flexible disk in its envelope.
- Store your flexible disk loosely in a vertical position, not stacked.
- Do not let your disk touch metal when stored (information can be lost).
- Do not touch the flexible disk surface exposed by the jacket slot.
- Do not attempt to clean your flexible disk in any manner.
- Write on your flexible disk jacket label before applying it to the disk. Use a felt tip pen, not pencil or ball point pen.
- Do not fasten paper clips to your flexible disk jacket edges.
- Keep your flexible disk away from magnetic fields.
- Keep your flexible disk away from telephones.
- Protect your flexible disk from liquids, dust, ashes, and metallic substances.

If your flexible disk appears to have a physical problem caused by mishandling, it may be necessary to attempt to copy files from that disk to another. Lesson "floppy" discussed in section 5 offers some options that might be helpful.

Below is a list of possible problems and corrective action you can take.

1. Flexible disk is inserted but doesn't seem to work.
 - a. Press Master Clear on both the terminal and drive.
 - b. If that doesn't work, remove the disk from the drive; turn off both the terminal and the disk drive; turn them both back on and insert the disk again.

- c. If that doesn't work, remove and inspect your disk. Has it been damaged? (written on, any evidence of decals, spills, or food). Damaged disks must be replaced. Note that disks can also be damaged by being placed on top of an operating drive, or if they come in contact with any magnetic media.
- d. If your disk does not appear to be damaged, ask your PLATO coordinator to call the PLATO hotline.

2. When inserting your disk, you see the message: Disk error.

Ask your PLATO coordinator to call the PLATO hotline.

NEW USER REGISTRATION

All PLATO users whose terminals are connected to a CYBER computer over a communications network must be registered before using PLATO services for the first time. PLATO instructors and students using flexible disks and microcomputers may or may not have to be registered before their first use. For microcomputer users, registration requirements vary with individual courses.

Of the following topics, network users should read *Using a Communications Network*, *Network User Registration*, *Starting a PLATO Session*, and *Ending a PLATO Session*. Microcomputer users should read *Microcomputer User Registration*.

USING A COMMUNICATIONS NETWORK

Your Control Data terminal or microcomputer can be connected to a CYBER computer by one of many communications networks. Terminals connected to a network send and receive information through telephone lines. And this connection is accomplished in one of two ways: by using a telephone to dial into the network, or by directly wiring the terminal to communications equipment.

Before you can begin a PLATO session, your terminal must be connected to a CYBER computer via a communications network.

Instructions for connecting your terminal to a network vary depending on the network you are using, and the connection method (telephone or direct wiring to communications equipment). Telephone connections are usually used when only a small number of terminals are in one location. Wiring terminals to communications equipment is more practical in larger installations.

PLATO users of CYBER systems not operated by Control Data will be using any number of communications networks.

Ask your PLATO coordinator for instructions to connect Control Data terminals to the network you use. Control Data customers receive network connection instructions when terminals and communications equipment are installed.

For more information regarding modes of PLATO communication, type "modes of plato communication" at the AIDS "What PLATO feature" arrow. (Refer to *Using AIDS* in section 4 for details about using PLATO AIDS.)

NETWORK USER REGISTRATION

To be registered, an author or instructor must create two identifiers: a name to identify you; and a group name that identifies your course of study, the material you should see, or a set of features available to you. Some examples of PLATO names and group names are: sally/music, john p/pilot, and mary smith/calculus. PLATO names and groups are always written in this paired fashion with a slash between the two identifiers.

After you are registered, you can use ("sign on to") PLATO services. The first time you sign on, you must choose a password. Your password is a secret word. It is a unique identifier used to ensure that only one person uses your PLATO name. These three identifiers, your name, group, and password, are called your sign-on. The following defines and describes the three parts of a sign-on.

Name Your PLATO name is the name you and the person who registers you select as your PLATO identifier. It can be your full name, first name, last name, or nickname; or any combination of letters, numbers, or spaces up to 18 characters. Capital letters are never required in PLATO names and group identifiers.

Group Your PLATO group is the name of a file on the PLATO network. It is assigned to you. Your PLATO group contains the names of a set of people who have something in common with you, such as taking the same course or working for the same company.

Each person listed in a group is automatically assigned a user record. Your user record identifies you as a student, instructor, or author. If you are a student, your record identifies specific lessons for you, stores information about lessons you have already studied, and saves test scores for your instructor to see. If you are an instructor or an author, your user record specifies the options available to you: whether or not you can change students' test scores, assign or study lessons from a catalog, create or destroy user records, write and receive notes, create curricula, and so on. Generally, your group record identifies which lessons you should study or the features you are allowed to use.

Password Your PLATO password is your personal identification. It is a secret word that you select that makes your record uniquely yours. You're the only person who knows it; this secrecy prevents others from using your PLATO record.

Your password should consist of a series of letters, numbers, and/or spaces up to 10 characters. It should be unusual so no one can guess it, and should never be told to anyone. Do not choose obvious passwords such as your spouse's name; the name of your group, employer, or location; your pet's name; your telephone number; a period, comma, abc, or other words or character strings which can be easily guessed. Choose something with which only you can identify. Your password is stored in your user record. However, no one can see the actual password. It is displayed as a random series of X's whenever you type it.

Each time you use PLATO services, you must type your sign-on. Your sign-on identifies you, your user type (student, instructor, author), and all the options available to you. Simply stated, your sign-on tells what you can and cannot see and do.

Not all users are required to have passwords. Students for whom no records are kept (for example, young children or special students) are seldom required to have passwords. Instructors decide whether or not to require student passwords on an individual basis.

STARTING A PLATO SESSION

Before you can see any lessons or use any PLATO features, you must sign on. The sign-on sequence is the identification exchange between you and the computer system you use. This exchange determines whether or not you can use PLATO services as well as what you can do once you are signed on. You must repeat the following steps each time you sign on.

1. When the terminal connects properly to the network, either the "Press NEXT to begin" message (figure 1-10), or the Welcome display (figure 1-11) appears. If the display shows anything else, press the BACK key or the SHIFT-STOP keys (hold the SHIFT key down while pressing the STOP key) several times until either "Press NEXT to begin" or the Welcome display appears. (If you see the Welcome display, go to step 3.)

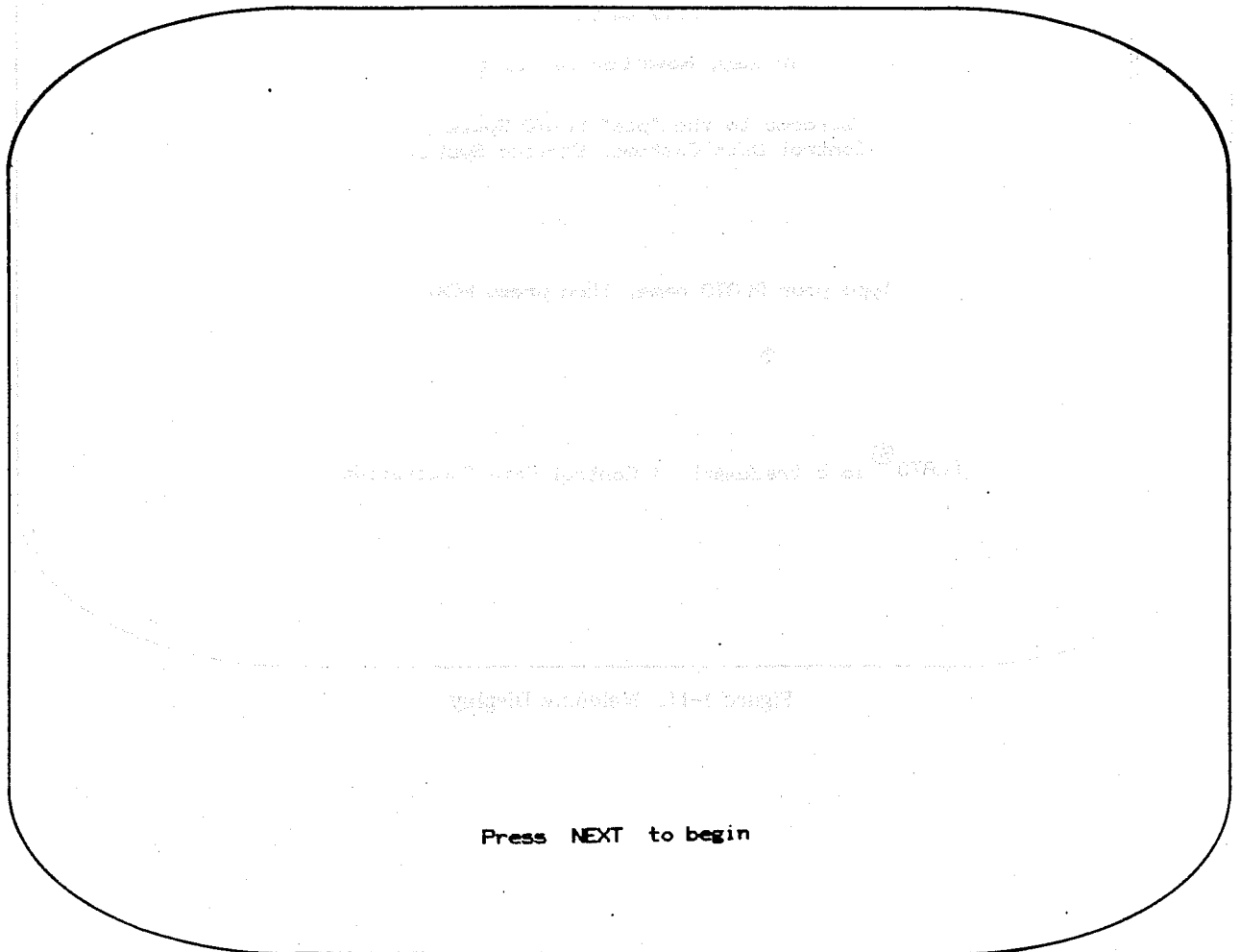


Figure 1-10. "Press NEXT to begin" Message

2. Press the NEXT key. The Welcome display (figure 1-11) appears.

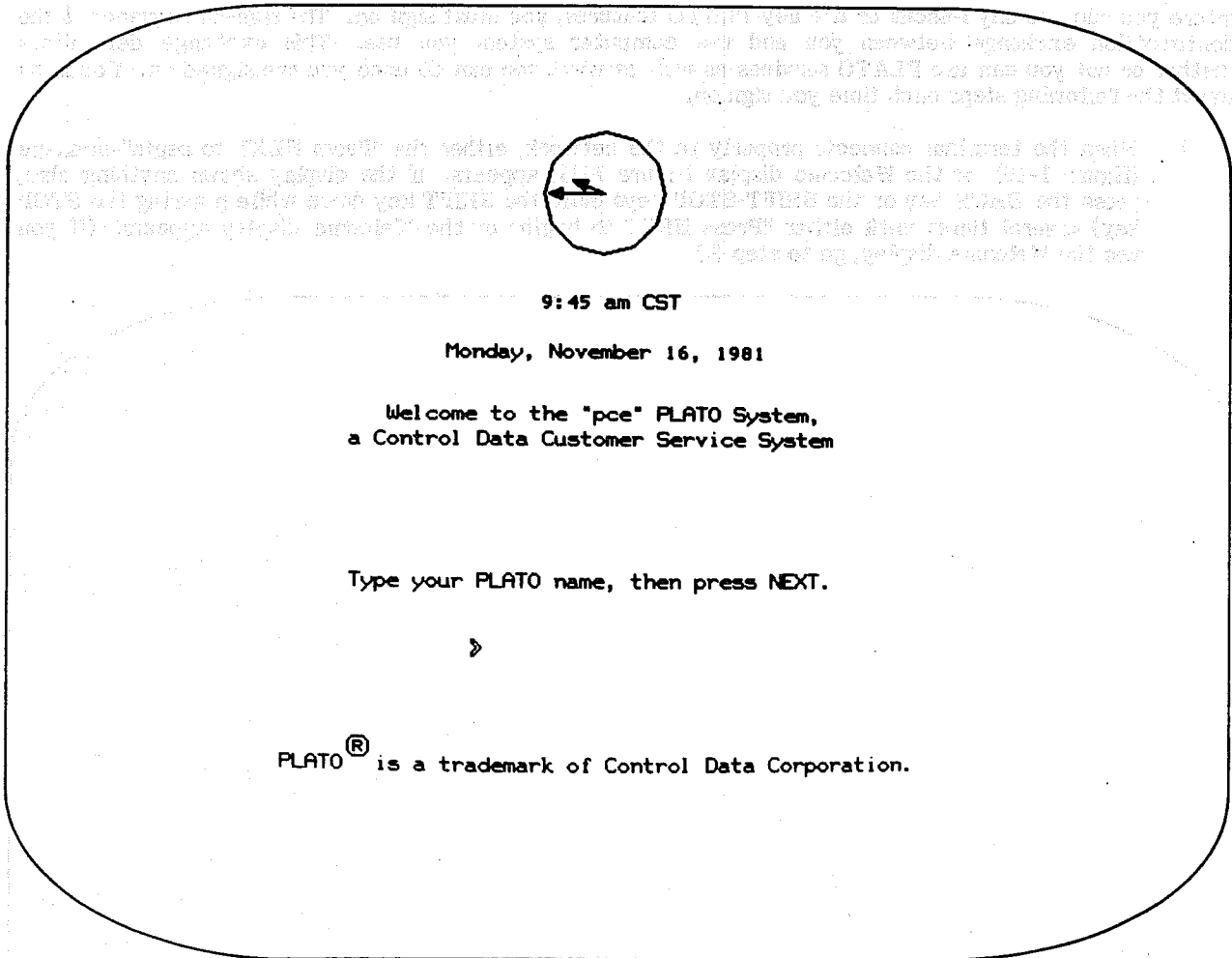


Figure 1-11. Welcome Display

3. Type your PLATO name. As you type, each character appears to the right of the arrow. Whenever you see an arrow on a PLATO display, you must type a response. Any response you type appears to the right of the arrow. If you make a mistake, press the ERASE key to erase each letter back to and including the mistake, and retype your response correctly from that point. When finished, press the NEXT key. Pressing NEXT indicates you have finished typing your name and want to go to the next step. Because names are of variable lengths, you need to indicate when you're ready to go on. A display similar to figure 1-12 appears.

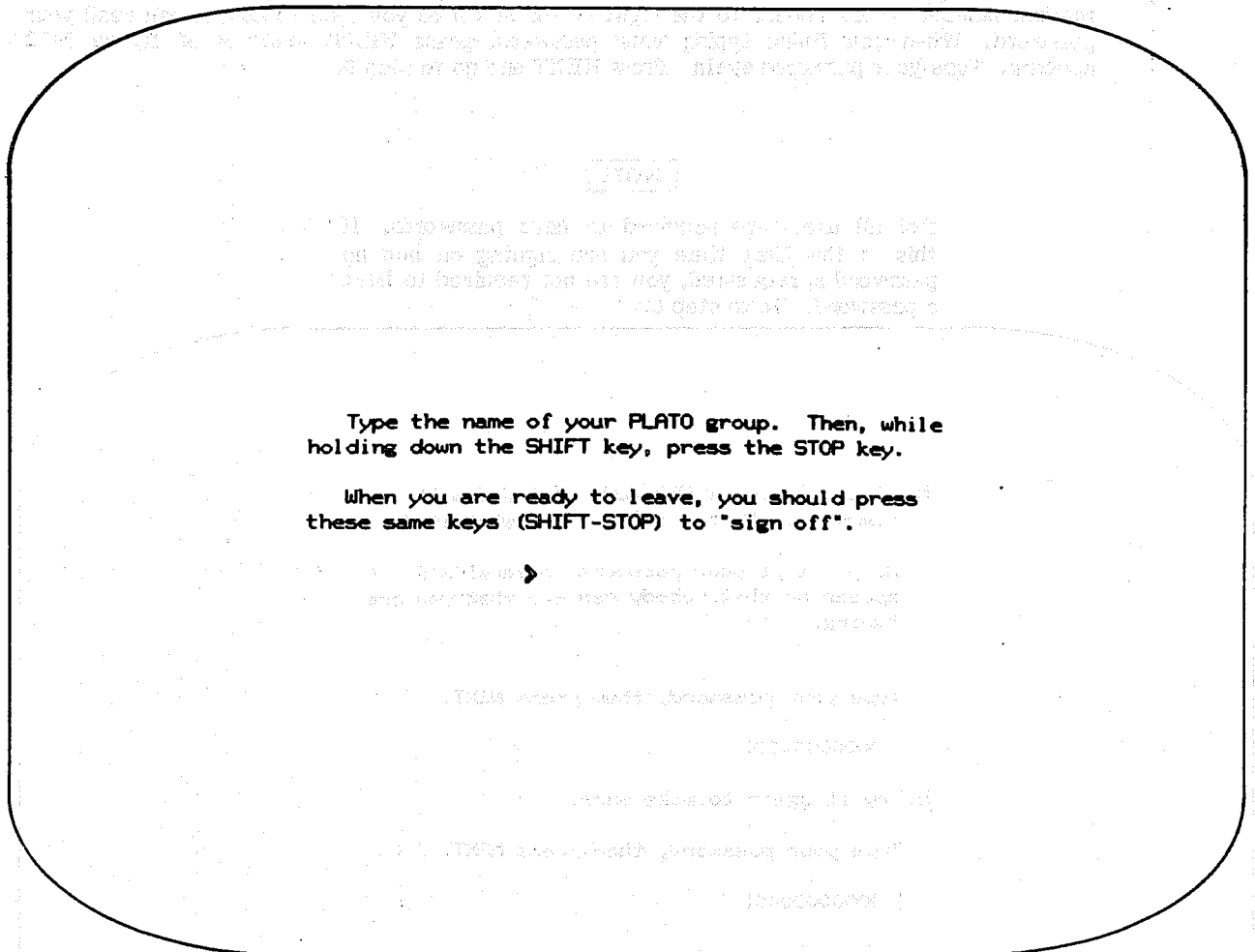


Figure 1-12. Group Identification
This display allows you to enter your group name while signing on.

4. Type the name of your PLATO group. These characters also appear to the right of the arrow. When finished, press SHIFT-STOP (hold the SHIFT key down while pressing the STOP key).

5. The next display allows you to either select or enter a password, depending upon whether or not you have previously chosen or been given a password. If you have not chosen or been given a password, read step 5a. If the person who created your sign-on provided you with a password (along with your PLATO name and group), or if you previously selected a password, read step 5b.
- a. If you are required to have a password and this is the first time you are signing on, a display similar to figure 1-13, part A, appears. Select your password and type it carefully. A random number of X's appear to the right of the arrow as you type so no one can read your password. When you finish typing your password, press NEXT. Part B of figure 1-13 appears. Type your password again. Press NEXT and go to step 6.

NOTE

Not all users are required to have passwords. If this is the first time you are signing on and no password is requested, you are not required to have a password. Go to step 6.

A. Choose a secret PASSWORD that you will remember. Do not tell anyone what it is.

As you type your password, several X's will appear so that nobody can see what you are typing.

Type your password, then press NEXT.

»XXXXXXXXXX

B. Try it again to make sure.

Type your password, then press NEXT.

»XXXXXXXXXX

Remember this password. You will be asked for it each time you use PLATO.

Press NEXT now.

Figure 1-13. Password Selection
This display (parts A and B) requests that you choose a password the first time you sign on.

- b. If you have previously selected or been assigned a password, you will see figure 1-14. Type your password. Press NEXT. Go to step 6.

NOTE

If you have forgotten your password, check with your instructor or the person who registered you. Your instructor can clear your password from your user record, allowing you to select another one.

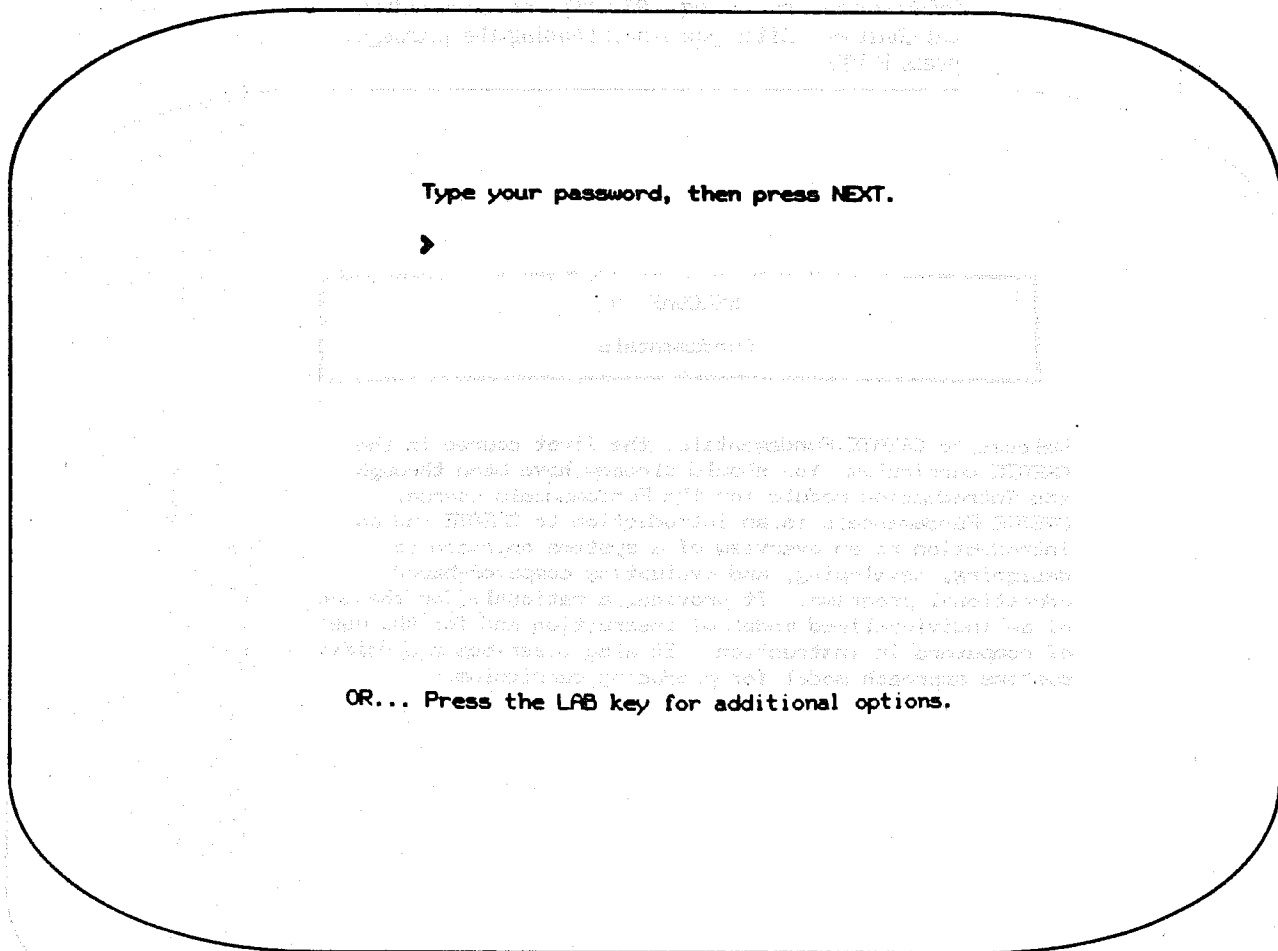


Figure 1-14. Password Display
If you have previously selected or been assigned a password, you will see this display, which asks you to enter your password.

6. At this point in the sign-on sequence, students, instructors, and authors are treated differently. If you are a student, either an index, a lesson, or another planned activity appears (refer to figures 1-15 and 1-16). If you are an instructor, the PLATO Facilities display appears (refer to figure 1-17). If you are an author, the Author Mode display appears (refer to figure 1-18).

NOTE

The first time you sign on, a message will be displayed that provides some important information on using PLATO communications capabilities. After you finish reading the message, press DATA.

WELCOME TO
Fundamentals

Welcome to CREATE Fundamentals, the first course in the CREATE curriculum. You should already have been through the Introduction module for the Fundamentals course. CREATE Fundamentals is an introduction to CREATE and an introduction to an overview of a systems approach to designing, developing, and evaluating computer-based educational programs. It provides a rationale for the use of an individualized model of instruction and for the use of computers in instruction. It also describes a specific systems approach model for producing curriculum.

NEXT to continue

Figure 1-15. Sample PLM Curriculum
This is the first display you will see when signing on to a PLM curriculum.

Fundamental

UNIT INDEX

UNITS YOU CAN WORK ON NOW:	TESTS TAKEN
→ a. Models of Inst.	b

UNITS YOU CAN WORK ON LATER:	PREREQUISITES
b. Computers in Inst.	a
c. Systems Approach 1	b
d. Systems Approach 2	c
e. Documentation	d

TYPE A LETTER (to work on that unit):

OR

1. To see how well you're doing
2. To sign off
3. To review instructions

Figure 1-16. Sample Student Index
Example of an index that may appear on a student's display.

PLATO Facilities

- a. Group operations (roster, statistics, etc.)
- b. Datafiles
- c. Account transactions
- d. Choose a lesson to study
- e. Notes
- f. Interactive communications
- g. Request a print
- h. AIDS (information about PLATO and TUTOR)
- i. PLMAIDS (information about the PLM system)

>

Type the letter (a-i) of one of the options above.

Press HELP for more information.

Press BACK to leave.

Figure 1-17. PLATO Facilities Display

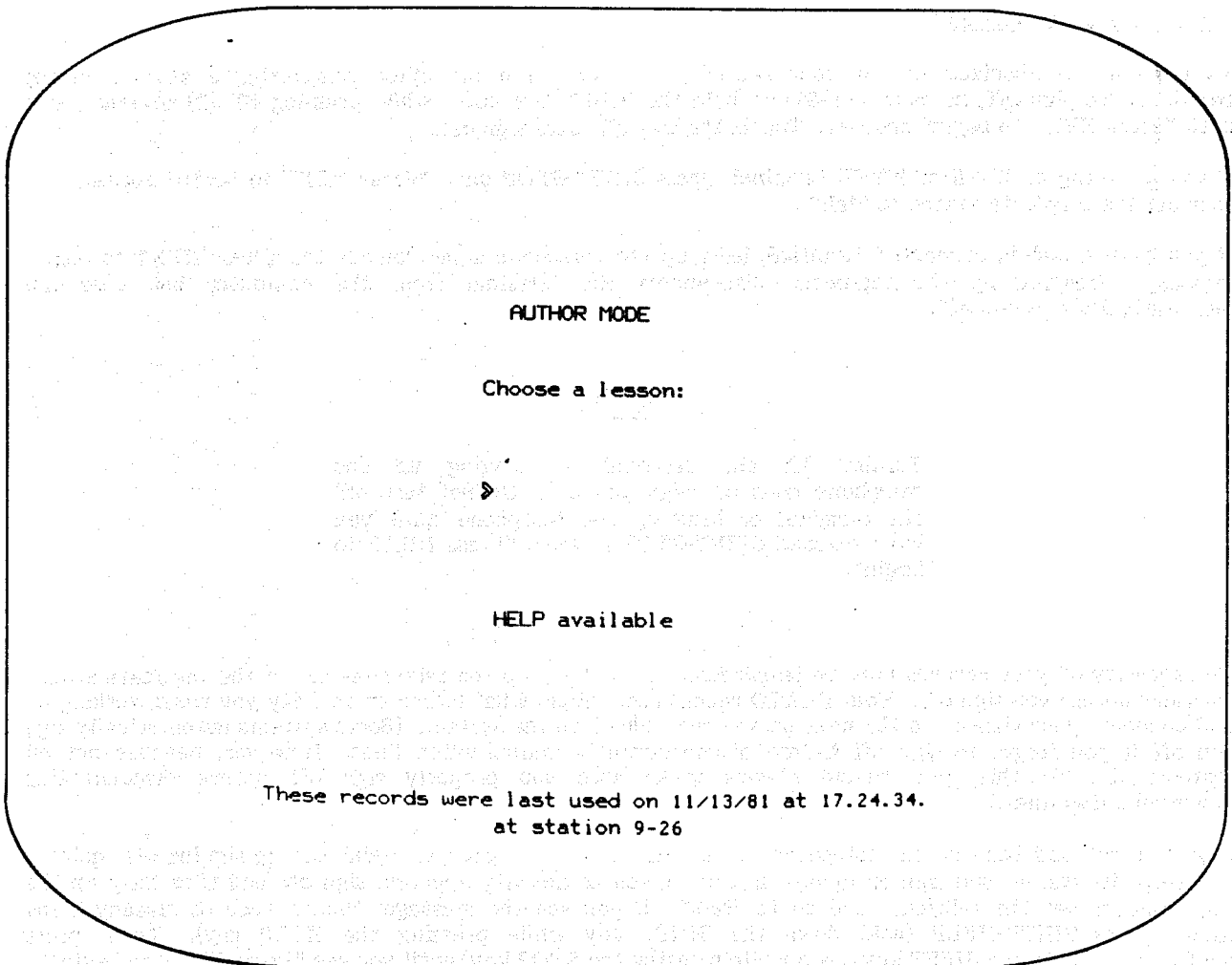


Figure 1-18. Author Mode Display

ENDING A PLATO SESSION

To prevent unauthorized use of your records, you must sign off after completing a session on the terminal. To sign off, press SHIFT-STOP (hold the SHIFT key down while pressing STOP) several times until "Press NEXT to begin" appears. This is the way all users sign off.

If you are using an IST-II or IST-III terminal, press SHIFT-STOP until "Press NEXT to begin" appears and then set the talk/data switch to "talk".

If you have a dial-in connected terminal, hang up the telephone after you see the "Press NEXT to begin" message. Hanging up the telephone disconnects the terminal from the computer but does not automatically sign you off.

NOTE

Turning off the terminal or hanging up the telephone does not sign you off. Do not turn off the terminal or hang up the telephone until you have pressed SHIFT-STOP and see "Press NEXT to begin".

The security of your records may be jeopardized if you hang up the telephone or set the talk/data switch to "talk" before you sign off. Your PLATO record remembers what lesson or activity you were working on and connects your sign-on to the next person who dials into the system. (Some systems automatically sign you off if you forget to sign off before disconnecting communication lines. However, because not all systems can do this, you should always make sure you properly sign off before disconnecting communication lines.)

If you forget and hang up the telephone or set the talk/data switch to "talk" before signing off, quickly dial into the system and sign on again. If your lesson or activity appears, sign off and then hang up the telephone or set the talk/data switch to "talk". If you see the message, "Sorry, records already being used", press SHIFT-HELP (hold down the SHIFT key while pressing the HELP key). Then, press SHIFT-STOP (hold the SHIFT key down while pressing the STOP key) until you see "Press NEXT to begin".

If you dial in to the terminal and another person's lesson or activity appears on your display, that user has forgotten to sign off before disconnecting communication lines. Press SHIFT-STOP (hold the SHIFT key down while pressing the STOP key) until you see "Press NEXT to begin" to sign the user off from the system. Then sign on using the sign-on sequence.

Changing Your Password

You can change your password any time you sign on to use PLATO services. You should change your password frequently to avoid the possibility of someone guessing it and using your records. To change your password:

1. Sign on as you normally do, typing your PLATO name and PLATO group.
2. Type your old password then press LAB (refer to figure 1-14).
3. Press LAB again. The display in figure 1-13 will appear.
4. Type your new password. Press NEXT.
5. Type your new password again to verify it and help you remember it. Press NEXT.

Orienting New Users

The large number of PLATO features can sometimes be overwhelming to new users, particularly new authors and instructors. A good way for new authors and instructors to orient themselves is to begin as a student, then progress to be an instructor, and finally an author.

Students see and use many PLATO features, but always in controlled settings. Starting as a student you will learn how to begin and end a PLATO session, recognize when a typed response is required, anticipate the actions of different keys on the keyboard, and direct your progress through PLATO lessons.

Once new users have achieved a basic understanding as students, those designated to become instructors and authors should become instructors. Instructors are introduced to several new sets of features. Most of these features are the behind-the-scenes actions that controlled what they could see and do as students.

After becoming comfortable with instructor features, new users designated to become authors should then become authors. As authors, they are introduced to additional features such as editing that allow them to write lessons for students to study. Authors can use all the features instructors and students can, in addition to those reserved exclusively for authors.

The following is a list of network lessons that introduce and provide examples of several basic PLATO features. These lessons give a good orientation to the PLATO features and give new users an opportunity to practice using them. If you are a new user and are not initially given student access, contact the person who registered you and ask for student access to see these lessons. If you are responsible for registering new users, you should initially register all new users as students and assign these lessons as an introduction.

<u>PLATO File Name</u>	<u>PLATO Lesson Title</u>	<u>Purpose</u>
"Øwhatsnext"	What's NEXT	Defines basic terminology; introduces users to using the keyset.
"Øgenintro"	An Introduction to the IST Terminals	Provides a general introduction to the IST terminals and keyset.
"Øvkintro"	An Introduction to the Terminal Keyboard	Gives an orientation to the Viking keyset layout and use.
"Øterm comme"	TERM-comments	Describes how to use TERM-comment, a system feature which allows users to comment on lessons they are studying.
"Øgraphics"	Graphics	Illustrates graphics capabilities.
"Øcalculate"	Calculation: a Touch Lesson	Illustrates touch panel capabilities.
"Øterm consu"	TERM-consult	Describes how to use TERM-consult, a system feature that allows authors and instructors to receive on-line help from PLATO consultants.
"Ønotesintr"	An Introduction to Notes	Introduces PLATO notes reading, writing, and sending.

In addition to these lessons, new users who will become instructors and authors should be given access to AIDS and the Catalog of Published Courseware.

MICROCOMPUTER USER REGISTRATION

Registration requirements for microcomputer users vary from course to course. When course disks record student scores for lessons and/or tests, student registration and identification are required. Student registration and identification are only required on the disks within a course that record scores or progress.

Registered microcomputer user identification can have one or two parts: a PLATO name, and a secret password to assure secure records.

Name Your PLATO name is the name you and the person who registers you select as your PLATO identifier. It can be your full name, first name, last name, or nickname; or any combination of letters, numbers, or spaces up to 18 characters. Capital letters are never required in PLATO names and group identifiers.

Password Your PLATO password is your personal identification. It is a secret word that you select that makes your record uniquely yours. You're the only person who knows it; this secrecy prevents others from using your PLATO record.

Your password should consist of a series of letters, numbers, and/or spaces up to 10 characters. It should be unusual so no one can guess it, and should never be told to anyone. Do not choose obvious passwords such as your spouse's name; the name of your group, employer, or location; your pet's name; your telephone number; a period, comma, abc, or other words or character strings which can be easily guessed. Choose something with which only you can identify. Your password is stored in your user record. However, no one can see the actual password. It is displayed as a random series of X's whenever you type it.

Not all users are required to have passwords. Your instructor will determine if passwords are required based on the sensitivity of the information stored for each student.

Many microcomputer courses store no student data until a final test, which may or may not be delivered via microcomputer. Courses storing no data usually require no student identification.

SECTION 2

USING STUDENT FEATURES

USING STUDENT FEATURES

Introduction	2-1	Handling Problems	2-16
Curriculum Structures	2-1	Communication Errors	2-16
Taking PLATO Lessons	2-3	Lesson Execution Errors	2-18
Studying on the Network	2-4	Messages You Might Receive	2-18
Indexed Lessons	2-5	Helpful Tools	2-19
PLATO Learning Management	2-6	Checking the Time	2-19
Requesting Help	2-9	Doing Mathematical Calculations	2-19
Help within a Lesson	2-9	Additional Student Options	2-20
Help from Your Instructor	2-10	Studying on Control Data Microcomputers	2-21
Commenting on Lessons (TERM-		Controlling Your Progress	2-21
comment)	2-15	PLATO Courses	2-23
Communicating with Group Members	2-15	Ending Your Session	2-24

INTRODUCTION

PLATO instruction is available on a variety of computer equipment. Sometimes you will study PLATO lessons on a terminal connected by telephone lines to a Control Data computer located in your city or state, another state, or possibly another country. These computers have the capacity to serve from fifty to one thousand users at the same time. Because each user's terminal is connected to a computer by a network of telephone lines, PLATO users refer to themselves as using the network or, the PLATO network.

Other times you will use a microcomputer. Because a microcomputer is dedicated to only one person's use at any one time, it is frequently referred to as a personal computer. PLATO courses are often available for your use on either the network or on a microcomputer.

Although operating instructions vary a little between the network and a microcomputer, once you have gained access to the network or started up the microcomputer, your PLATO lessons will operate much the same way on both.

This section presents an overview of PLATO curriculum structures for network and microcomputer users. It explains student activities, and defines and describes how to use student features for both instructional delivery methods.

All users should read the Introduction (section 1) before reading this section. Section 1 will explain the operation of the equipment you are using and how to turn on and insert your course disks in your microcomputer. Instructions for using the network vary. See your PLATO coordinator for network access instructions.

All students, instructors, and authors should read the sections titled Curriculum Structures and Taking PLATO Lessons. Microcomputer users should then skip to the section titled Studying on Control Data Microcomputers. Network users should proceed to Studying on the Network.

CURRICULUM STRUCTURES

PLATO lessons can be organized in various ways. Your instructor determines how your lessons are grouped and also how much flexibility to give you while taking lessons. Most students are assigned a curriculum to study. A curriculum is a study plan that concentrates on a specific topic or subject. Curricula usually cover a broad subject area such as cardiology, time management, or robotics.

Curricula can be organized in different ways: some curricula are composed of several modules. A module is a group of lessons that relate to the same basic subject. Each lesson in the module presents instructional materials that concentrate on a different module topic. The combined lessons and modules compose the curriculum (refer to figure 2-1).

Other curricula are composed of several courses. A course is a complete learning package that concentrates on a specific topic of the curriculum. It contains modules that present objectives, provide instructional lessons, administer tests, and suggest study materials related to the subject of the course (refer to figure 2-2).

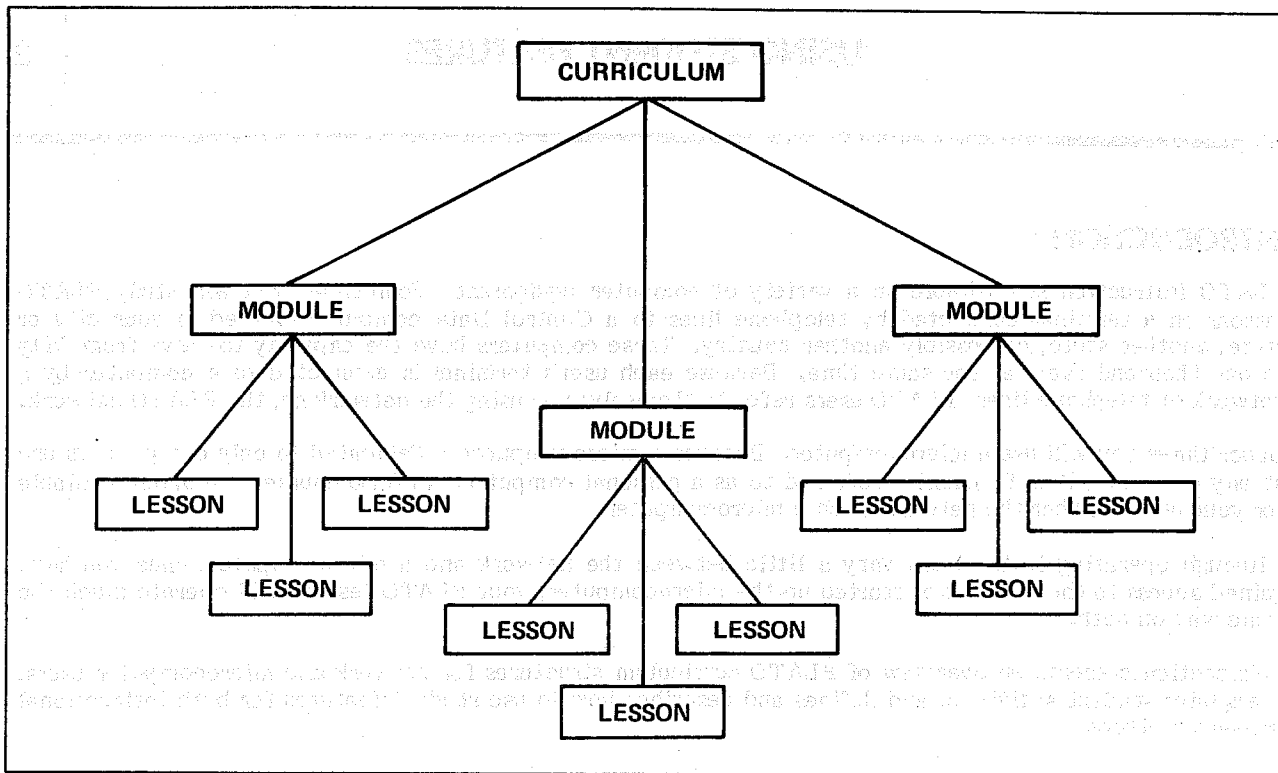


Figure 2-1. PLATO Curriculum Structure
 An example of how lessons and modules compose a curriculum.

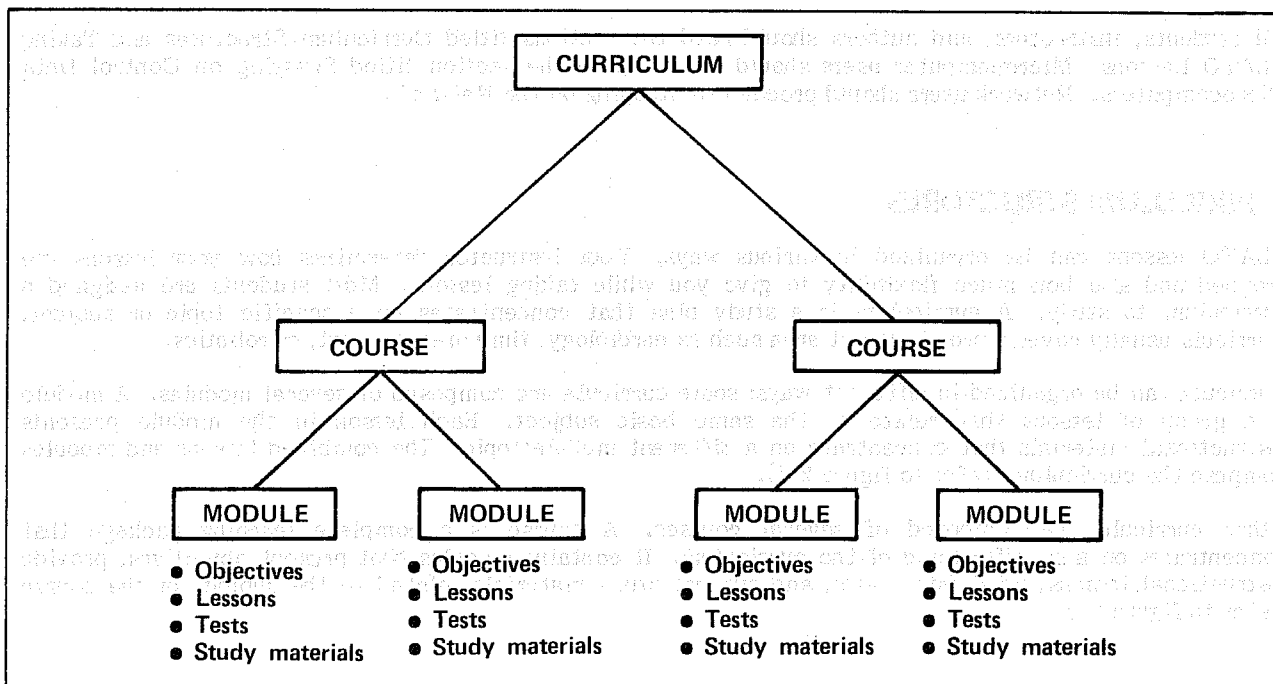


Figure 2-2. PLM Curriculum Structure
 This figure illustrates how courses and modules make up a PLATO Learning Management (PLM) curriculum.

Most curricula are designed to meet individual student needs. They can allow differing degrees of flexibility. Some curricula allow you to choose the order of the lessons you want to study, while others require lessons to be studied in a specified sequence. Some curricula allow you to take a test before studying a lesson. Usually, if you pass the test, you are not required to study the lesson or lessons designed to prepare you for the test. Taking a test before studying lesson materials helps you know what you should concentrate on, and lets you preview the test questions. Many curricula include a statement of the objectives for the modules and lessons. These objectives help you get a better understanding of the information you are expected to know once you complete the course of study.

Sometimes, lesson authors choose to call courses and modules by different names, such as blocks or units. Whatever their names, the basic curriculum structure is still the same.

TAKING PLATO LESSONS

Before you begin studying PLATO lessons, it is helpful to know what kinds of things you might be asked to do, or the kinds of things you might want to do.

Press NEXT when you finish reading the information displayed and are ready to see more. Usually, the PLATO lesson reminds you to press NEXT when finished reading by displaying "Press NEXT" or "NEXT" at the bottom of the screen. Remember, whenever you are in doubt about what to do, press NEXT.

Sometimes, you will be asked to answer a question by typing a response. When a typed response is expected, you will see an arrow (➤) on the display. You can respond to a question in one of two ways. If you see a list of options, type the letter or number in front of the option. Sometimes a different key, such as the ANS key, will be used to record a response. If you do not see a list of options from which to choose, type your answer and press NEXT. You should always press NEXT after you type a response to a question not selected from a list of options. NEXT indicates your response is complete and should be evaluated.

Pressing BACK usually allows you to see displays you read previously. Press BACK until you reach the display you want to see. To return, press NEXT until you reach the desired display.

Many PLATO lessons contain extra reading material to enhance your understanding different parts of a lesson. Pressing HELP often displays this useful reading material. Press HELP if you need help understanding part of a lesson, if you are interested in seeing more detailed information about part of a lesson, or if you are unsure of what to do in a lesson. You will see "HELP" or "HELP Available" at the bottom of the display to remind you to use the HELP key.

Some keys are used only occasionally in PLATO lessons. These keys are called function keys. Function keys can do a variety of things, depending upon what the lesson author programs them to do. Some keys provide lab exercises or problems for you to solve, some cause the display to partially or totally erase and add new information, and others take you to a new series of displays which give more information about a specific subject. After you use a function key, you will see instructions to press NEXT or BACK to return you to the place in your lesson.

Most lessons tell you which function keys are available for your use. This information is usually given at the beginning of the lesson. Other times, individual displays state which keys are available. Traditional places to look to find available keys are the bottom two lines of the display, often in the corners. The following keys are often used as function keys: LAB, DATA, SHIFT-NEXT, SHIFT-BACK, SHIFT-LAB, and SHIFT-DATA. Remember, keypresses that have a hyphen following the SHIFT notation (such as SHIFT-NEXT) require you to hold down the SHIFT key while pressing the function key.

STUDYING ON THE NETWORK

After you sign on, your display resembles one of the two displays in figure 2-3. Each curriculum has its own set of instructions on how to proceed through the lessons in it. Common locations for these instructions are the bottom corners of the display. Find the display in the figure which most closely resembles your display and read the following related information.

PLATO Learning Management

Contemporary Biology

Name	student	Session # 6
Group	bio101a	
Today's date	November 6, 1983	
Last date on	November 6, 1983	

Welcome back!

Press NEXT to continue

Introduction to Arithmetic

1. Addition
2. Subtraction
3. Multiplication
4. Division

Choose a letter, or press one of these keys:
SHIFT-STOP to sign off

HELP for explanation

Figure 2-3. Examples of PLM and "mrouter" Curricula

INDEXED LESSONS

An index (refer to figure 2-4) lists the lessons in your curriculum. Occasionally, new lessons are added to the index as you complete other lessons. Depending upon how your curriculum is designed, you can randomly choose lessons to study, choose lessons according to a specified sequence, or choose lessons according to a specified sequence and review previously studied lessons.

Fundamentals

UNIT INDEX

UNITS YOU CAN WORK ON NOW:	TESTS TAKEN
+ a. Models of Inst.	b
UNITS YOU CAN WORK ON LATER:	PREREQUISITES
b. Computers in Inst.	a
c. Systems Approach 1	b
d. Systems Approach 2	c
e. Documentation	d

TYPE A LETTER (to work on that unit):

OR

1. To see how well you're doing 3. To review instructions

2. To sign off

Figure 2-4. Sample Module Index

PLATO LEARNING MANAGEMENT

A display similar to one of those in figure 2-3 appears the first time you sign on to a curriculum using PLATO Learning Management (PLM). PLM is a system capability designed to direct you through the curriculum in an individualized manner. It presents tests covering learning objectives, selects learning resources for you to study, and keeps records of your performance.

PLM gives your instructor several options while designing your curriculum. It also gives you, the student, a range of options. For example, you can see the objectives for each module before you begin working in it or read the objectives to see what material the test and learning materials cover. You may be required to take a test before seeing the study assignment. Or you may be given a choice as to whether you want to take the test first.

It is a good idea to take a test before you study to find out which areas you need to study most, and receive assignments for those areas. You can often take tests both before and after you study the learning materials. However, once you have taken a test, you may be required to complete some assigned activities before you can take the test again.

Sometimes your instructor may require you to take a placement test before you begin studying. A placement test is used to measure your level or understanding on a certain subject. Based on your performance on the test, specific lessons may be assigned or unavailable to you.

Your instructor may also require you to wait a specified amount of time before taking a test again to encourage you to study further, rather than spend all your time testing.

PLM curricula frequently give you a choice of learning materials to study. For example, you can choose to read a textbook, listen to an audiotape, view a videotape, or study a PLATO lesson to achieve one or more of the module objectives. Many curricula combine these and other types of learning materials. The types of learning materials available and the flexibility to choose one in favor of another depends upon your instructor and the design of your curriculum.

The curriculum tells you how to proceed from one part to the next and explains what you have to do to master each part. You are shown how to see the objectives, take a test, begin a PLATO lesson, and see how well you are progressing through the curriculum.

The Course Index display (refer to figure 2-5) shows those courses that make up your PLM curriculum. You can choose to work on any course listed under the heading "Courses you can work on now." You pick a course to work on by typing its number and pressing NEXT.

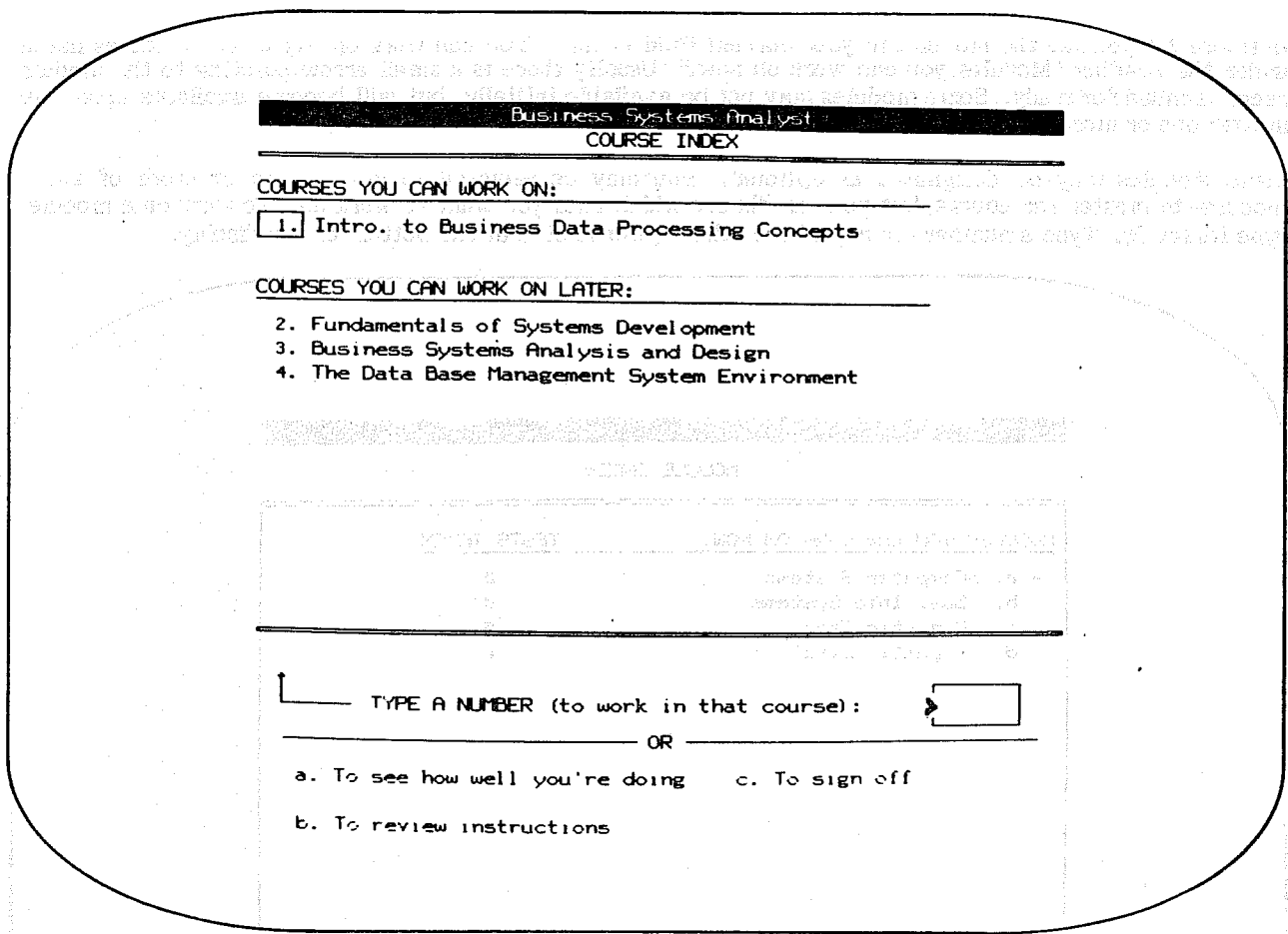


Figure 2-5. PLM Course Index
The appearance of the module options will vary a little from one course to another.

In figure 2-6 you see the modules in your current PLM course. You can work on any of the modules listed under the heading "Modules you can work on now." Usually there is a small arrow pointing to the module recommended for study. Some modules may not be available initially, but will become available after you master one or more of the other modules in the course.

Some modules may be designated as optional. You may be required to master one or more of these modules to master the course, but you can choose which ones you want to work on. To work on a module, type its letter. Type a number for any of the other options listed at the bottom of the display.

Intro. to Business Data Processing Concepts

MODULE INDEX

MODULES YOU CAN WORK ON NOW:	TESTS TAKEN
→ a. Computer Systems	B
b. Bus. Info Systems	B
c. Magnetic Tape	B
d. Magnetic Disk	B

TYPE A LETTER (to work on that module):

OR

1. To see how well you're doing
2. To work in a different course
3. To review instructions

Figure 2-6. PLM Module Index
Students select modules from this display.

REQUESTING HELP

If you have questions or do not understand what to do while using PLATO curricula, you can request help. Two kinds of help are available to students. These are: help within a lesson and help from your instructor.

Help within a Lesson

Most lessons contain helpful information available to all students. This information can describe a point or procedure in more detail than was explained in the main part of the lesson, give how-to information, provide definitions and formulas, or give information on how to proceed in the lesson.

This information is reached by pressing HELP. The HELP key is the first key you should press when you have a question during a lesson. The HELP key only works when it is listed as available. (Most lessons include the HELP key). "HELP Available" or "HELP" is usually displayed when the HELP key is working. Pressing HELP during your lesson usually causes one of three things to happen:

- Information can be added to your current display.
- Your current display can be erased and show new information.
- New information can be added to your current display as well as give you the option to see more information.

After you press HELP and additional information is displayed, you will be told which keys to press to proceed through the HELP sequence and return to the lesson. If no instructions are given, press NEXT to proceed. You will be returned to the display from which you initially requested help.

Help from Your Instructor

You can communicate with your instructor about questions or problems you have while using PLATO instruction. You should request help if you do not understand what you are doing in a lesson or if you feel lost and do not know what to do next. Three ways to receive help from your instructor are: TERM-ask, Student Notes, and Personal Notes. The following defines each of these features and describes how to use them.

TERM-ask

TERM-ask allows you to request assistance from an instructor about a lesson you are studying while you are actually studying the lesson. It is a PLATO communications feature that allows you to talk with your instructor by typing messages on the bottom of your display. TERM-ask is not automatically available to all students. Your instructor must arrange for you to use TERM-ask.

The following describes how to use TERM-ask.

A. Contacting Your Instructor

1. Press TERM (hold down the SHIFT key while pressing the TERM/ANS key). You will see "what term? >."
2. Type "ask" and press NEXT. You will see one of the following messages:
 - a. If you see the message "Someone has been notified," your instructor is available to answer your question and has been notified you called. You can continue your lesson while you wait for your instructor to contact you (it usually takes a few minutes for your instructor to reply).
 - b. If you see the message "Sorry, no one is available," your instructor is not currently available to answer your question. In some cases, you are given the option to write a note to your instructor. To write a note, follow the instructions in Commenting on Lessons, later in this section.
 - c. If you see the message "Sorry, your group is not prepared for TERM-ask," TERM-ask is not available to you.
3. When your instructor contacts you, you see a message such as "sally jones/teacher/pca also sees this display." (pca refers to the system you and Sally Jones are using. The name of your system is on the Welcome display.)

B. Communicating with Your Instructor

When your instructor contacts you, you can communicate by typing messages on the bottom of your display. Your instructor can also "monitor" your display (see the same information on his/her display that you see on yours). This eliminates the need for you to describe in detail where you are in the lesson and what problems you are having.

The following steps describe how to communicate with your instructor.

1. When your instructor contacts you and you see a message such as "sally jones/teacher/pea also sees this display," an arrow appears in the lower left corner of your display. Any message your instructor types appears to the right of this arrow.
2. To communicate with your instructor, press TERM (hold down the SHIFT key and press the TERM/ANS key). A second arrow appears. Any message you type appears to the right of this arrow.
3. Type your message. Your instructor sees the message as you type it. If your message requires more than one line of typing, press LAB to clear the line and continue typing. The LAB key is the only key that allows you to continue typing. If you press a function key other than LAB (for example, BACK), the arrow disappears. If you accidentally press another function key and the arrow disappears, press TERM to recall the arrow and resume typing.

C. Showing Your Instructor Your Display

Although your instructor has the ability to monitor your display, the display you are looking at when she/he initially contacts you does not immediately appear on your instructor's terminal. If the display you want your instructor to see is the one you are looking at when your instructor contacts you, you need to replot your display (replot means to erase and rewrite what is on your display).

The following steps describe how to replot your display.

1. Do one of the following, depending upon the type of lesson you are using.
 - a. If you are using PLM, press DATA.
 - b. If you are taking a lesson, either press BACK and then NEXT, or press HELP and then NEXT.
2. Press TERM (hold the SHIFT key down while pressing TERM) to talk while your instructor monitors your display.
3. To show your instructor a different display, press BACK to discontinue typing. Go to the new display and repeat step 2.

D. Ending TERM-ask

When your questions are answered and you do not want further help, type "thanks" or "bye". (Remember to press the TERM key to type messages.) Your instructor ends the communication. You will see a message telling you TERM-ask is over.

Student Notes

Student Notes are a communication feature which allows you to read notes from and write notes to your instructor, group members, and other users. Your instructor determines whether you can use Student Notes and your degree of participation. Your instructor allows you to write and receive notes, write notes only, or receive notes only. Your instructor also determines with whom you can communicate (for example, group members, all users, or just your instructor). To find out if you have access to Student Notes look at your lesson index. You have access if "notes" is one of the options listed, or if a function key is listed as a notes option. If nothing is listed, your instructor has not arranged for you to use Student Notes.

You should write a note to your instructor if you have a comment or a question about the lesson you are taking, or to respond to a note written to you. The following steps describe how to read and write student notes.

1. If "notes" are listed as an option, either type the letter in front of the option or press the designated function key.
2. Do one of the following, depending upon what you want to do.
 - a. Press NEXT to read your notes.
 - b. Press SHIFT-LAB to write a note. Go to step 3.
 - c. Press BACK to return to the index.

If your instructor sends you a note, you will see a message telling you there are notes you have not read.

3. After you press SHIFT-LAB, you will see a rectangular box with an arrow in the upper left corner. Directions for writing a note are listed under the box. Press HELP for information on how to write notes.

Personal Notes

Personal Notes are private notes between individual PLATO users. You can write personal notes to or receive personal notes from any user whose group is prepared to receive notes, provided your instructor has granted you Personal Notes use. To find out if you can use Personal Notes, look at your lesson index. You can reach Personal Notes if "personal notes" is one of the options listed, or if a function key is listed as a Personal Notes option. If nothing is listed, your instructor has not arranged for you to use Personal Notes.

The following steps describe how to write personal notes.

1. Follow the instructions on your lesson index to reach Personal Notes. (Function keys and lesson selections vary with different curricula.) You will see the Personal Notes display (refer to figure 2-7).

PERSONAL NOTES

Press: **LAB** to read your notes
DATA for other options
HELP for explanation and policy

To whom do you wish to send a note:

Name >

Group

System

Figure 2-7. Personal Notes Address
Personal notes are addressed on this display.

2. Type the name of the person to whom you want to send a personal note. Press NEXT.
3. Type the name of the group in which the user is registered. Press NEXT.
4. Type the name of the system in which the user is registered (for example, "pea", "pca", and so on). Press NEXT. If the user is registered in the same system as you, press NEXT before typing the system name. Your system is automatically recorded. (The name of your system is on the Welcome display.) You will then see figure 2-8.
5. Read the instructions printed at the bottom of the display. Press HELP for more information on how to write notes.

Refer to Using Personal Notes in section 4 for more information on reading and writing personal notes.

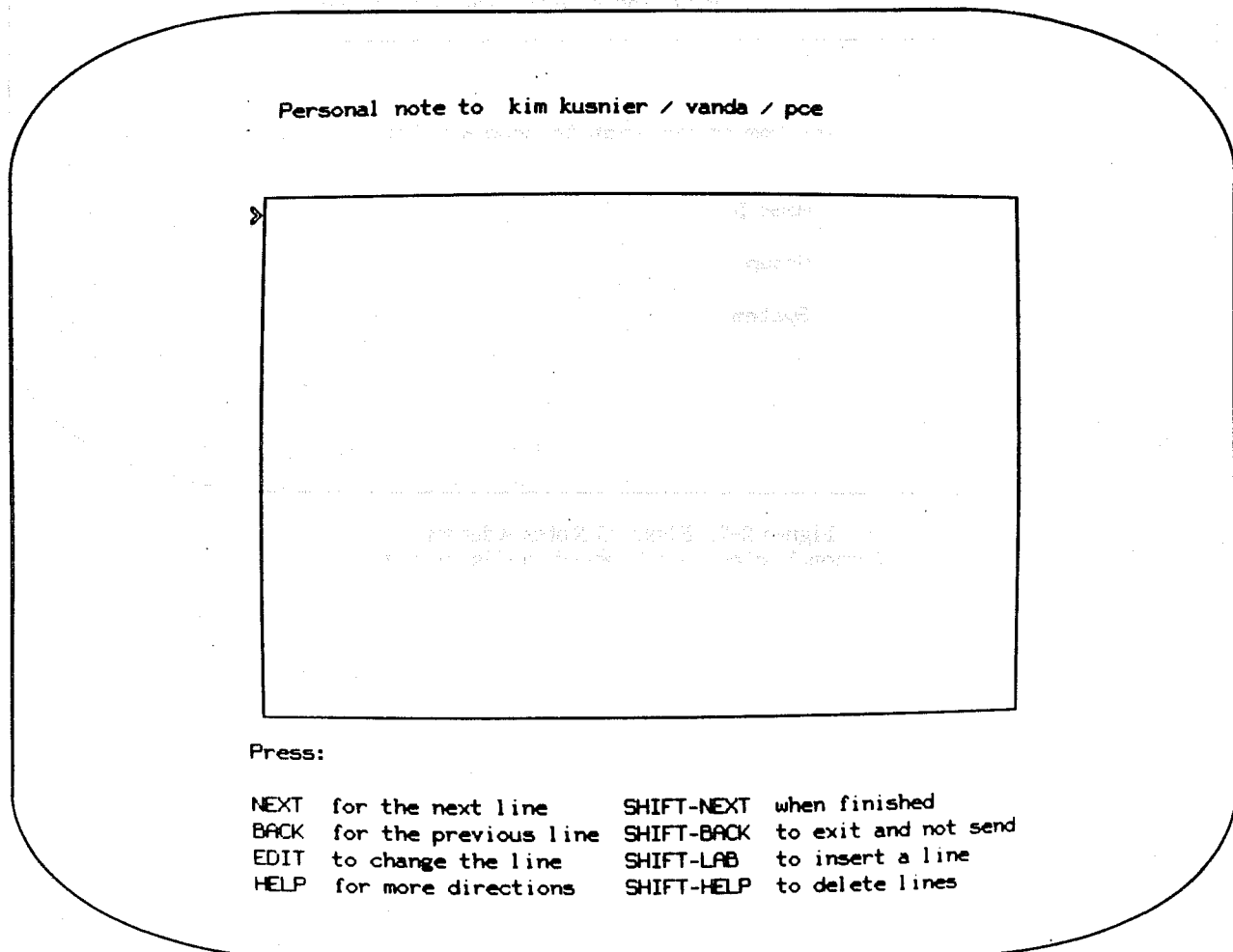


Figure 2-8. Personal Notes Editor
Personal notes are written on this display.

COMMENTING ON LESSONS (TERM-comment)

You can comment on a lesson you are taking using TERM-comment. TERM-comment allows you to comment on a lesson without leaving the lesson. The comment is sent to the lesson author or your instructor. Some reasons to comment on a lesson are: unclear instructions, confusing explanations, or incorrect answers or information. Write a comment about areas in a lesson which you do not understand or find confusing, to ask for a clarification of a technical point, or to start a discussion. Keep your comments brief but be specific. The following steps describe how to use TERM-comment.

1. Press TERM (hold the SHIFT key down while pressing TERM/ANS). You will see "What term? >."
2. Type "comment" and press NEXT. You will see a message saying your comment will be sent to the lesson author or your instructor. A line appears at the bottom of the display with an arrow below it on the left side. Some instructions are below the line.
3. Press HELP for more information on using TERM-comment.
4. Type your message. Press NEXT at the end of each line to continue typing. The maximum length of a comment is 20 lines.
5. Press BACK to read or correct lines previously typed. Continue pressing BACK until the line you want to read or change appears to the right of the arrow. Use the ERASE and EDIT keys to make your corrections (refer to appendix A for information on how to use ERASE and EDIT).
 - a. If your comment is completed after making your corrections, go to step 6.
 - b. If you want to continue typing after making your corrections, press NEXT repeatedly until you return to the last line of your comment. Finish typing your comment and go to step 6.
6. Press SHIFT-NEXT to send the comment, or press SHIFT-BACK to cancel the comment.

COMMUNICATING WITH GROUP MEMBERS

As a student, you can communicate with other members in your group, other groups, or all users on the system through General Notes. General Notes are a collection of notes written by members of a defined community about a particular subject. The notes are grouped into sets. Each set concentrates on a specific topic and is identified by a name. General Notes allow group members to share and exchange ideas and comments about specific topics or subjects of interest.

Not all general notes can be read or responded to by all users, however. Many directors of notes discussions restrict access to certain PLATO groups only. Some directors allow you to read and write notes, but others allow you to do only one or the other. You see only the notes discussions to which you have approved access.

Your instructor can tell you which general notes, if any, you can reach. The "notes" option appears on your lesson index if you can access one or more general notes. To learn how to access and participate in General Notes, refer to Using General Notes in section 4.

HANDLING PROBLEMS

Occasionally, problems might occur while you are using PLATO services. These can include distorted displays, lines across the display, or random letters or symbols displayed. Most of these problems are minor and can be easily corrected by you. The following describes the different types of problems you might experience while using PLATO services. Table 2-1 provides a list of suggested ways to solve problems.

Communication Errors

Communication errors result when there is interference on the communication lines between the CYBER computer and your terminal. These are usually minor problems which you can correct. When a communication error occurs, the display is often distorted. Sometimes lines may be drawn across the display, sentences may be upside down or sideways, or text may be written backwards. Usually, the error (err) indicator lights when there is a communication error. To correct the error and clear the communication lines, press STOP. If the problem persists after you press STOP one or two times, refer to table 2-1 for instructions.

Communication errors can also cause graphic displays to be distorted. Graphic displays are usually pictures, animated characters, or extra large or small printing. If only the pictures, bold letter titles, or a special alphabet like Hebrew or Russian are distorted (figures are drawn over text, striped or solid boxes appear on the display, you see upside down letters, and so on), press the TERM key (hold the SHIFT key down and press TERM/ANS), type "charset", and press NEXT.

Table 2-1. Troubleshooting Procedures

Problem	Solution
<p>Telephone rings, but you get a busy signal or no answer.</p> <p>Terminal writing appears upside down, backwards, and so on.</p> <p>Red error (err) light goes on and you get no response from typing or touching the display.</p> <p>Red error (err) light goes on frequently, causing display errors.</p> <p>"PLATO OFF" message appears.</p> <p>"PLATO not available" message appears.</p>	<ol style="list-style-type: none"> 1. Hang up and try again. 2. Call PLATO Hotline. <ol style="list-style-type: none"> 1. Press either master-clear button or reset switch briefly. <ol style="list-style-type: none"> 1. Press STOP key until light goes off. 2. Press either master-clear button or reset switch briefly. 3. Hang up and redial. 4. Call the PLATO Hotline. <ol style="list-style-type: none"> 1. Hang up, wait 5 minutes, and redial. 2. Ask the operator to dial for you. 3. Call the PLATO Hotline. <ol style="list-style-type: none"> 1. Wait for one of these messages: <ol style="list-style-type: none"> a. Press NEXT to begin. b. PLATO services will resume in 5-10 minutes. c. PLATO services will resume at xx:yy hours Central Time. <ol style="list-style-type: none"> 1. This message is occasionally seen late at night and indicates that routine maintenance is being done.
<p>The PLATO Hotline number is 1-800-328-4915 (outside Minnesota) or 612-375-8111 (Minnesota only).</p> <p>If you call the Hotline, give the person on duty the following information:</p> <ul style="list-style-type: none"> • Your name and location (city, state), and phone number. • The name of the system you use. • A description of your problem. • If you are experiencing communications problems, such as the error (err) light going on, the staff member helping you may ask your site, or station number. You will find this information by pressing DATA from the Welcome display. 	

Lesson Execution Errors

Lesson execution errors occur when a lesson is not designed to accommodate every response or keypress you might select. Because PLATO lessons are so flexible and offer many options, your lesson might not be prepared to handle all the responses or keypresses you might choose. When you ask the lesson to do something which it was not prepared to handle, a lesson execution error might occur.

When a lesson execution error occurs, you see a "Lesson execution error" message. This tells you what has occurred and gives some information on the place in the lesson where the error occurred. When you see the lesson execution error message, you have the option of writing a note to the lesson author. You can help the author determine how to correct the problem by recalling what happened right before the error occurred. For example, state which key(s) you pressed, the response you typed, or anything unusual you did or noticed.

The following steps describe how to write a note to the lesson author after a lesson execution error occurs.

1. At the bottom of the display you see a line with an arrow below it on the left side. Follow the instructions printed below the line.
2. Press HELP for additional instructions.
3. Type your note. Press NEXT at the end of each line to continue typing.
4. Press BACK to reread lines previously typed. Continue pressing BACK until the line you want to read or change appears to the right of the arrow. Use the ERASE and EDIT keys to make your corrections.
 - a. If your note is finished after making your corrections, go to step 5.
 - b. If you want to continue typing after making your corrections, press NEXT repeatedly until you return to the last line of your note. Finish typing your note and go to step 5.
5. Press SHIFT-NEXT to send the note to the lesson author, or press SHIFT-BACK to cancel the note.

Messages You Might Receive

Sometimes problems can occur that cause the CYBER system to stop working. These problems are called "crashes." When the system crashes, you see a message indicating the system is not available. If you are using a terminal when the system crashes, the lesson or activity you are working on stops and all keyboard input is ignored. A "PLATO OFF" message appears at the top of your display. A few minutes later, the display is erased and a message appears. It usually tells you what time the system is expected to be working again.

Whenever the system is down, you do not have to sign off. The system automatically signs all users off when it crashes. This is the only time you do not have to sign off from the system after you have signed on.

If the system is temporarily unavailable, a message is displayed which usually indicates what time PLATO services are scheduled to resume.

HELPFUL TOOLS

Some PLATO features are similar to reference materials. These features can do mathematical calculations or tell you the correct time of day and the current date. Students can use these features any time they are using PLATO services. Occasionally, an author may inhibit these features from working in a particular lesson. For example, the feature that does math calculations is often turned off in math lessons and tests. The following paragraphs describe these features and how to use them.

Checking the Time

You can ask to see the current time and date by using TERM-time. TERM-time displays the current time at the location of the system (not necessarily the local time) and the day, month, and year. To use TERM-time, follow these steps.

1. Press TERM (hold the SHIFT key down while pressing TERM/ANS). You will see "what term? >."
2. Type "time" and press NEXT. You will see the current time and date at the bottom of the display.

Doing Mathematical Calculations

You can do mathematical calculations using TERM-calc. TERM-calc allows you to present mathematical equations for the system to solve.

You need to understand how the system solves mathematical equations before using TERM-calc to set up your equations correctly and assure your equation is properly evaluated. The rules for mathematical equations are basically those of ordinary arithmetic. The order of operations from first to last is:

1. Exponentiation.
2. Multiplication.
3. Division.
4. Addition and subtraction.

All equations are solved in this order.

Use parentheses liberally when writing your equations to make your expressions clear. For example, $6-2x3$ is read as $6-(2x3)$ instead of $(6-2)x3$, since multiplication is done before subtraction. Parentheses ensure your equation is interpreted correctly.

The keys on the left of the keyboard contain the four operations: \times , \div , $+$, $-$ (multiply, divide, add, and subtract, respectively). An asterisk (*) is equivalent to \times and a slash (/) is equivalent to \div . Exponentiation is indicated with two asterisks ($3^{**}2=9$) or superscripts ($2^2*4=16$). Use the SUPER key to type one superscript at a time and SHIFT-SUPER to type more than one superscript at a time. Press SHIFT-SUB to return to the normal typing line.

To use TERM-calc, follow these steps.

1. Press TERM (hold down the SHIFT key while pressing TERM/ANS). You will see "what term? >."
2. Type "calc" and press NEXT. You will see an arrow at the bottom of the display.

3. Type your calculation but do not include an equal (=) sign. Press NEXT. For example, (250 + 250) - 250 NEXT. You will see the correct answer (for example, 250), after pressing NEXT.
4. Press NEXT to enter another expression.
5. Press BACK to return to your previous activity.

To learn more about TERM-calc, study the PLATO lesson "Qtermcalc". To learn more about entering and evaluating expressions, study PLATO lesson "Qintrob".

ADDITIONAL STUDENT OPTIONS

Not all student users study curricular materials. Because a student is guided to PLATO features by an easy-to-use index, some users are given student sign-ons for direct access to specific features. The following defines some of the features available to these student users and references the sections of this manual with detailed information about them.

Documentor

Documentor is a PLATO utility used as a tool for organizing, editing, and presenting text. (Refer to Using Documentor in section 4 for more information about Documentor.)

Catalog of Published Courseware

The Catalog of Published Courseware contains a list of all published PLATO lessons. (Refer to Using the Catalog of Published Courseware in section 4 for more information about the catalog.)

Print Requests

This feature allows you to request a print of a PLATO file, check the status of a request previously made, and check the availability of the printer. (Refer to Requesting Prints in section 4 for more information on this feature.)

On-Line Author Listing

This feature allows you to see a list of PLATO authors and biographical information about them. (Refer to Using the On-Line Author Listing in section 4 for more information about this feature.)

AIDS

AIDS is an on-line PLATO reference manual. It contains helpful information on PLATO features and PLATO language commands.

"mprouter"

Lesson "mprouter" is used to index and sequence lessons to be delivered on Control Data microcomputers.

GUIDE

GUIDE is an authoring tool that allows you to create and edit graphic displays. (Refer to Graphics Utility for Interactive Documentation Ease in section 4 for more information.)

GUIDE Aids

This feature provides information on GUIDE and instructions for creating graphic displays.

STUDYING ON CONTROL DATA MICROCOMPUTERS

CONTROLLING YOUR PROGRESS

Once your disk is inserted properly in the disk drive (refer to section 1), your display will identify the course you are about to study by showing you a title display. A sample title display is shown in figure 2-9. Pressing NEXT from the course title will often take you to an index (refer to figure 2-10).

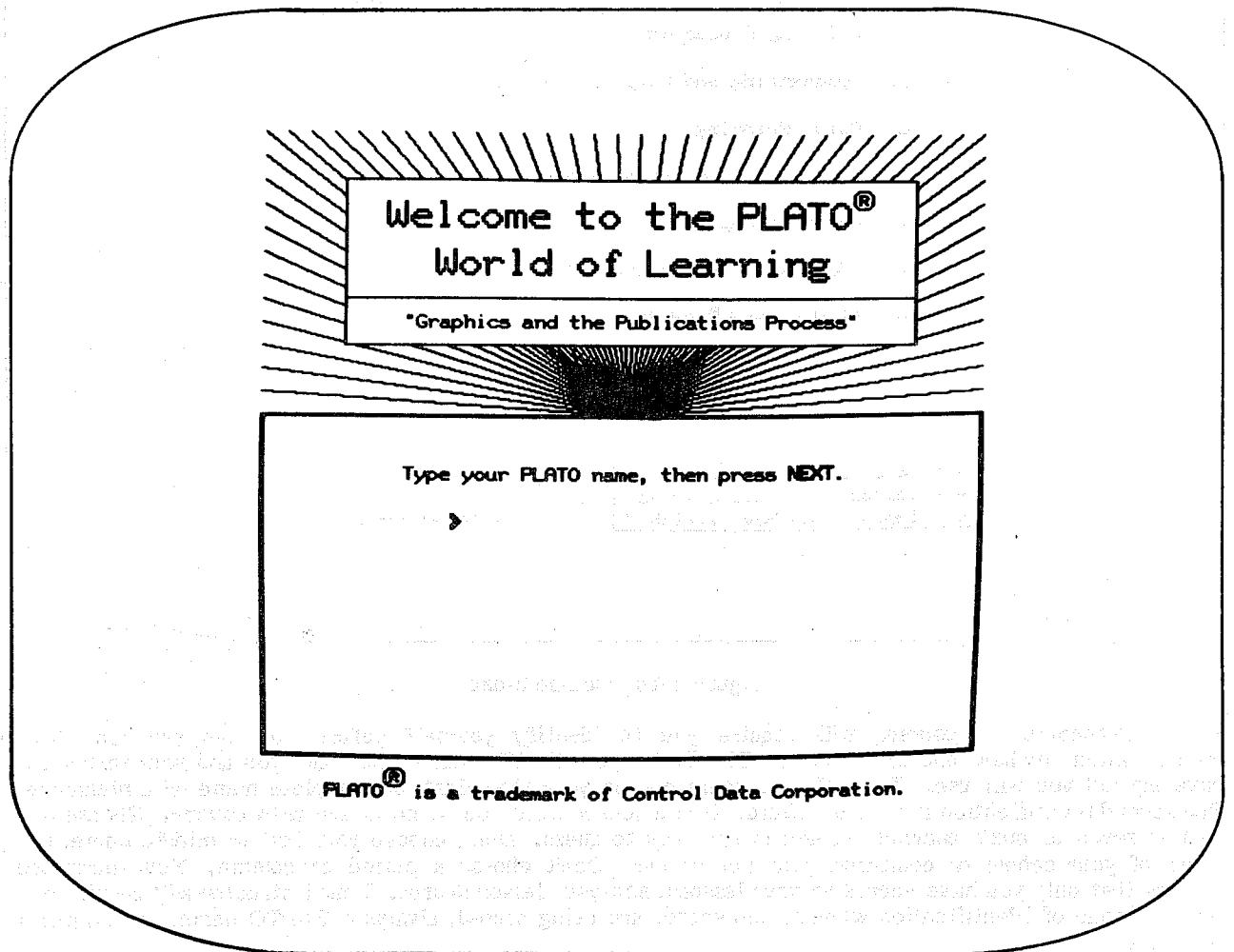


Figure 2-9. Course Titles

"Graphics and the Publications Process"

Page 1

Type a letter to enter a lesson. You may enter lessons marked with →. To see the prerequisites of an unmarked lesson, type the associated letter.

SCORE

- a. Printing Processes
- b. Typesetting and Composition
- c. Color Printing
- d. Inks and the Printing Process
- e. Printing Papers
- f. Impositions and Signatures
- g. Folding and Binding

- = lessons you may enter
- ◊ = lessons you have started
- ◆ = lessons you have finished

HELP available

Figure 2-10. Course Index

Some microcomputer courses will require you to identify yourself before you can proceed. This identification can have one or two parts. The first is your PLATO name, the name you and your instructor have agreed you will use. Your PLATO name can be your first, last, or complete name or a nickname. The second identification is your password. It is a secret word you do not share with anyone. Choose one that is seven or more characters, and is not easy to guess. Don't choose your last or middle name, the name of your school or company, your pet or car. Don't choose a period or comma. Your password assures that only you have access to your lessons, and your lesson scores. Your instructor will require one or two forms of identification when lesson scores are being stored, always a PLATO name, sometimes a password.

After entering your PLATO name and password, you will see an index of lessons to study. The index will usually list lessons in a given module or segment of a course. Typing the number or letter in front of a lesson title will take you to the lesson and allow you to study it.

Several kinds of indices are used for microcomputer courses. A number of them are designed for specific courses and cannot be detailed in this manual. Control Data makes one index available for all instructors who want to use it.

The PLATO course can work several different ways, depending on your instructor's preference. The following discussion gives a brief orientation to PLATO courses on flexible disks.

PLATO COURSES

Your instructor uses the PLATO course index to direct your progress through its lessons. It is shown in figure 2-11.

The index will also remind you of your status in each lesson. The symbol (◊) next to a lesson means the lesson has been started; (◆) means the lesson has been completed. No symbol next to the lesson means you have not yet studied that lesson.

Sometimes the Control Data microcomputer will be keeping a score as you take a lesson. Your instructor decides if you can see those scores. When they're kept, your instructor can always see them when he or she inserts your disk.

If, for example, you see the word "exempt" before a lesson title, your instructor has indicated that you do not have to study that lesson. Additionally, your instructor may decide that you should not study some of the lessons. The word "locked" in front of a lesson title indicates you will not be able to study it.

Your instructor may also allow you to review exempt lessons or lessons already completed. If you try to review a completed lesson, and your instructor has decided against review, you will see a message telling you that review is not allowed.

Because microcomputers frequently are not connected to the network, remember that several network features you may have used are not available when studying lessons on flexible disks. These include TERM-ask, TERM-calc, TERM-time, and notes.

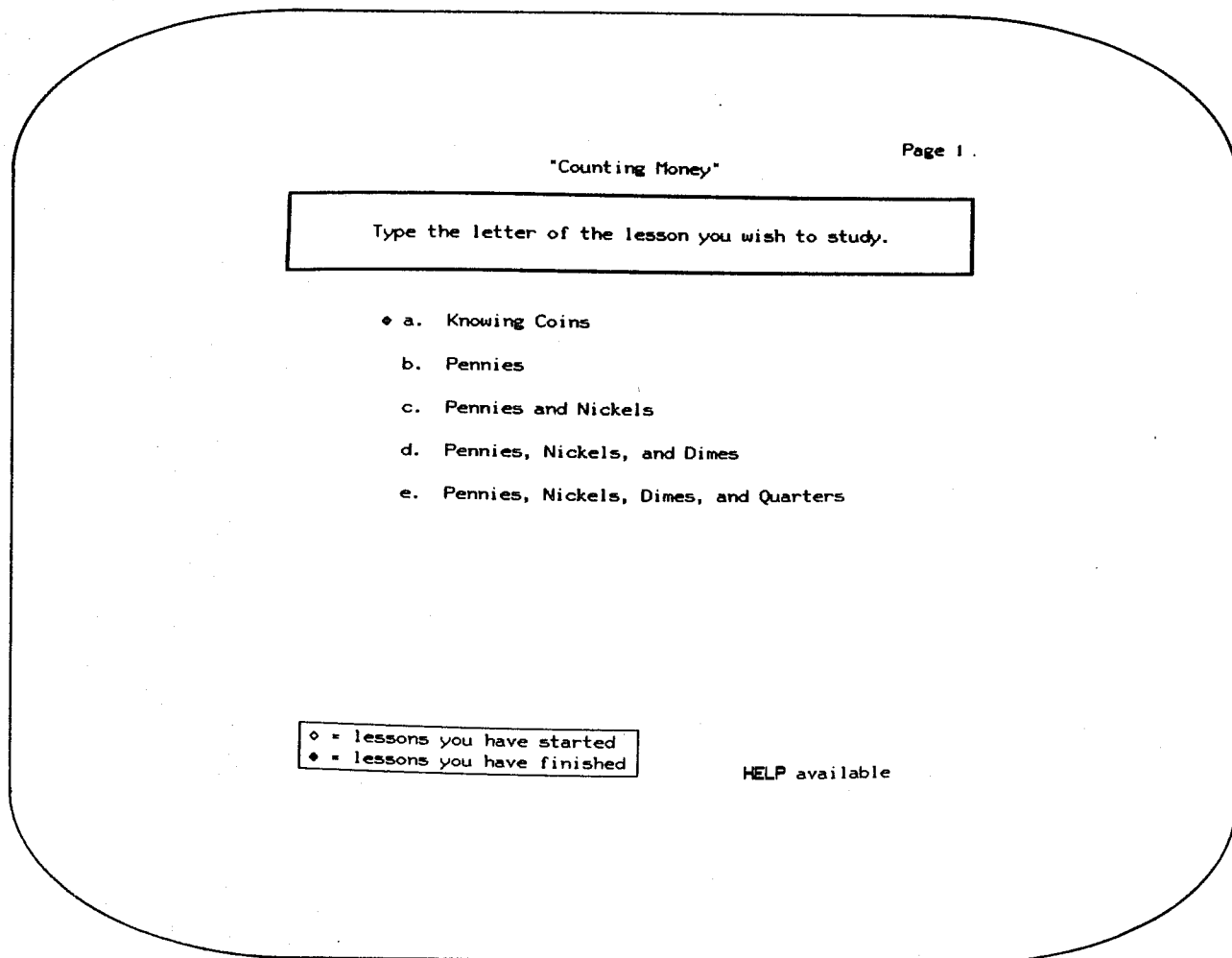


Figure 2-11. The PLATO Course

ENDING YOUR SESSION

If you have completed all the lessons on the disk, or, if your time is up for today, follow these steps.

1. Return to the lesson index. If you are still looking at a lesson, press SHIFT-STOP to return to the index. Pressing SHIFT-STOP records your progress in the lesson and marks the lesson as partially complete on the index.
2. Remove the disk from the drive only while looking at the lesson index. Press the black button on the disk drive to open the door.
3. Pull out the disk.
4. Replace the disk in its protective cover and store it where it will not be lost or damaged.

SECTION 3

USING INSTRUCTOR FEATURES

USING INSTRUCTOR FEATURES

Introduction	3-1			
Using Network Courses	3-1			
PLATO Facilities Display	3-1			
Using AIDS	3-4			
Using the PLATO Group	3-9			
Group Data	3-10			
Group Security	3-12			
Group Operations	3-16			
Registering Students	3-16			
Deleting Students	3-16			
Deleting Individual Students	3-16			
Deleting All Students	3-16			
Listing All Group Members	3-17			
Inspecting/Changing Student Records	3-17			
Leaving a Message	3-17			
Using the PLATOSCRIBE Router ("s(cribe)")	3-18			
Using Your Account	3-19			
Reviewing and Studying Lessons	3-22			
PLATO Courses and Curricula	3-23			
Designing a Curriculum	3-25			
Instructional Management Tools	3-26			
Using Datafiles	3-35			
Additional Instructor Options	3-37			
		Monitoring Group Members		3-37
		Specifying Group Data Collection		3-37
		Templating Records		3-37
		Copying Records from Another Group		3-38
		Creating Instructor Records		3-39
		Managing Personal Notes		3-40
		Using Notes		3-40
		Using Interactive Communications		3-41
		Requesting Prints		3-41
		Receiving Help		3-41
		Giving Help		3-42
		Using Microcomputer Courses		3-43
		Instructional Management Tools		3-43
		The PLATO Router ("mprouter")		3-43
		Using the PLATO Router		3-44
		Using PLATO Router Options		3-47
		See or Edit a Student's Record		3-47
		See the Roster		3-49
		See Student or Lesson Data Summary		3-50
		Set Router and Security Options		3-52
		Add a Student		3-53
		Delete a Student		3-53

INTRODUCTION

A PLATO instructor has responsibilities similar to a classroom instructor in a school, technical school or business. PLATO instructors create class rosters by registering students, review PLATO lessons and curricula for applicability and content, select published curricula or create their own from sets of available lessons, define mastery levels, and monitor student progress.

PLATO instruction is available on a variety of computer equipment. You may choose to deliver your courses on either Control Data microcomputers, or Control Data terminals connected to a CYBER computer by a communications network. Some of you may choose to use both instructional delivery methods. The options available to you will vary with the delivery method.

This section defines and describes PLATO instructor features. Instructors should read the manual Introduction (section 1) and Using Student Features (section 2) before this section. Using Instructor Features is divided into two parts: Using Network Courses and Using Microcomputer Courses. If you use both delivery methods, you should read all of section 3. If you only use one delivery method, you can read only about the options you will be using.

USING NETWORK COURSES

As a PLATO instructor, the first display you see after signing on is the PLATO Facilities display (figure 3-1). This is your navigational tool. All the resources you need can be reached from this display.

PLATO FACILITIES DISPLAY

The complete PLATO Facilities display has nine options. However, all nine options are not available to all instructors. Only the options assigned to you appear on your PLATO Facilities display. Your account owner or director determines which options are most applicable to the things you need to do and assigns those options. Some users have limited access to some selected instructor features and options. This type of user is typically a training coordinator, administrator, teaching assistant, or someone assisting an instructor or training director in some capacity. Consult your account owner or director to add needed options to your display. The nine PLATO Facilities options are shown in figure 3-1.

PLATO Facilities

- a. Group operations (roster, statistics, etc.)
- b. Datafiles
- c. Account transactions
- d. Choose a lesson to study
- e. Notes
- f. Interactive communications
- g. Request a print
- h. AIDS (information about PLATO and TUTOR)
- i. PLMAIDS (information about the PLM system)

>

Type the letter (a-i) of one of the options above.

Press HELP for more information.

Press BACK to leave.

Figure 3-1. PLATO Facilities

Each of the nine PLATO Facilities options allows you to use different features. The following briefly describes each option.

Group Operations

This option allows you to manage PLATO groups. You can enroll or delete students from a group, see and change individual student and group records, leave messages, and assign lessons to students with this option. Refer to Group Operations later in this section for more information.

Datafiles

This option allows you to collect and examine supplemental data (usually formative in nature) on lessons in your curriculum that have been written to allow data collection. Some examples of data you can examine are: student requests for help; answers students gave to questions (both correct and incorrect); and information on lesson execution errors. Refer to Using Datafiles later in this section for more information.

Account Transactions

This option allows you to see information about your account. Your PLATO account contains information on the number of people who can use PLATO services simultaneously; keeps a running record of the names, types, and number of files in your account; and provides administrative tools for managing the account. (A file is a set of data. Group files, notes files, and lessons are examples of files. These files are contained within the account. Refer to Understanding File Structure and Use in section 4 for more information.)

Examples of the kinds of things you can do within the account are: adding or deleting files, looking at statistics on lessons, and seeing what users in the account are signed on.

Refer to Using Your Account later in this section for more information.

Choose a Lesson to Study

This option allows you to study a PLATO lesson as a student, as well as reach on-line reference materials. Refer to Reviewing and Studying Lessons later in this section for more information.

Notes

This option allows you to communicate with other PLATO users. Using Personal Notes, you can write notes to and receive notes from other PLATO users and students. You can also read notes from PLATO personnel regarding the current status of the system, as well as read, write, and respond to notes in General Notes files.

Interactive Communications

These options allow you to see a list of current PLATO users, talk to someone using TERM-talk, set your TERM-talk options, and respond to requests for help from students or others using TERM-ask. Refer to Using Interactive Communications later in this section for more information.

Request a Print

This option allows you to request prints of files (lessons, notes, and so on). You can also check the status of a print request previously made and check the status of the printer. Refer to Requesting Prints later in this section for more information.

AIDS

This option allows you to use the on-line PLATO reference manual. AIDS contains helpful reference information on PLATO features for both authors and instructors. It also contains information about the PLATO authoring languages. Refer to Using AIDS for more information.

PLM Aids

This option allows you to use the on-line reference manual for PLATO Learning Management (PLM). PLM Aids contains helpful reference information on PLM features for both authors and instructors.

To select a PLATO Facilities option (refer to figure 3-1), type the letter in front of the desired option (for example, to look at the first option type the letter a). Then you will see you a new display giving you more detail about that option or a list of other options. Whenever you have selected a PLATO Facilities display option, you can usually return to PLATO Facilities by pressing BACK.

USING AIDS

AIDS is an on-line reference manual for authors and instructors. It contains definitions and explanations of most of the PLATO features and all of the PLATO Author Language and Micro PLATO Language commands. Authors and instructors frequently use AIDS as a reference tool. The following are examples of the kind of information available in AIDS.

- List of indices in AIDS.
- Definitions of PLATO terminology.
- Descriptions of PLATO features and lessons.
- Names and descriptions of useful lessons.
- Information on PLATO publications.
- Suggestions on writing, testing, and evaluating lessons.

Refer to AIDS whenever you need more information about a specific feature. To use AIDS, choose the "AIDS" option from PLATO Facilities by typing the letter in front of "AIDS". You will see the AIDS title display (figure 3-2).

A I D S

Elaine Avner, Darlene Chirolas,
Celia Davis, Monica Fortner,
Jim Ghesquiere, Tina Gunsalus,
Jim Kraatz, Judy Sherwood

PSO Author Group -- CERL
Univ of Illinois, Urbana

Press HELP if this is your first time in lesson AIDS

© Copyright, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1988
Board of Trustees of the University of Illinois
Revised by Control Data Corporation, Copyright © 1981, 1982,
1983

NO portion of the AIDS lessons may be reproduced
in any form without permission from the authors.

349 features requested per day for the last 616 days

Figure 3-2. AIDS

From this display, you can do one of three things, depending upon your needs.

- Press **HELP** for more information on AIDS and how to use it.
- Press **NEXT** for the AIDS index (figure 3-3). The AIDS index consists of two displays (press **NEXT** for the second display, **BACK** to return to the first) that function like a table of contents. It presents an overview of the information covered in AIDS. Choose an option that generally covers the information you want to see by typing the letter in front of it. You will either see the information or a second, more detailed index.

Press **HELP** for more information on how to use the AIDS index.

- Press **DATA** to bypass the index and request information on a specific command or feature (figure 3-4). Type the name of the command or feature on which you want information and press **NEXT**. You will then see the information.

For a quick reference, you can press **DATA** from anywhere in AIDS, and see this same option (figure 3-4) to request information.

Press **HELP** for more information on how to use this display.

The following are some suggested topics for new instructors' reference in AIDS.

- "groups"
- "curriculum design"
- "instructor"
- "notes"
- "term-ask"

Press a letter; or press NEXT for page 2

page 1
of 2

- a How to use AIDS
- b Author Resources
- c Alphabetical PLATO Author Language Commands List
- d Functional PLATO Author Language Commands List
- e Lists of System Defined Variables, Keynames, Functions, Logical & Bit Operators, -specs- Tags
- f Making Displays
- g Making Graphs & Charts
- h Calculations and Variables
- i Conditional Operations
- j Sequencing
- k Judging
- l Execution of TUTOR

Revised by Control Data Corporation, (©) 1983

SHIFT-BACK always returns you to an index display.
HELP, DATA, BACK, SHIFT-NEXT are always available.

Figure 3-3. AIDS Index Displays (1 of 2 Displays)

Press a letter; or press NEXT for page 1

page 2
of 2

- m The CDC Computer
- n Special Characters: ACCESS Characters, Linesets,
FONT Characters (Character Sets), & MICRO Keys
- o Student Data, Instructor Options, & Routers
- p Keynames, Keycodes, and Internal Codes
- q Programming Errors and Condense, Lesson, &
Execution Errors
- r Library of Author Routines
- s Systematic Lesson Design
- t Informational System Terminal (IST)

SHIFT-BACK always returns you to an index display.
HELP, DATA, BACK, SHIFT-NEXT are always available.

Figure 3-3. AIDS Index Displays (2 of 2 Displays)

AIDS

What PLATO feature? >

HELP for help on how to use AIDS
SHIFT-BACK for Main AIDS Index
SHIFT-DATA to make a comment about AIDS

Figure 3-4. AIDS "What PLATO feature" Arrow
This display allows you to request information on a specific command or feature.

USING THE PLATO GROUP

The PLATO group is the primary working tool of a PLATO instructor. This section defines the PLATO group, explains its functions and the information it contains, lists the available options, and gives step-by-step instructions on group options.

A PLATO group is made up of people with something in common while using PLATO services. For example, users studying the same course or curriculum, writing lessons for the same course or organization, or working on the same project might be members of the same group. Each of these persons is registered in the same group file. (A file is a finite set of data used for a defined purpose.) Instructors use the group file to: enroll and monitor students, and design and manage curricula. The group file contains general information about the group and records for each person in the group.

A group file must be created before people can be enrolled. To create a group, contact your account owner and request a group. (Some instructors can edit their accounts and therefore can create the files they need themselves.) Creating a group involves naming a group file and imposing safeguards against misuse of the file and its eventual contents. Once this is done, you can begin enrolling group members (refer to Maintaining File Security in section 5).

As an instructor, you have a number of options in your group. You can register someone, delete someone, see a list of all group members, leave a message for one or more group members, see a list of all group members currently using PLATO services, change or clear a student's password if it has been forgotten, and see statistical information on an individual or group basis.

To see information on an individual, you need to refer to that person's user record. A user record is maintained for each person enrolled in the group. Each record varies according to user category (student, author, instructor, multiple). Some information, however, is the same for all users. User records contain such information as: user's name, date the user last used PLATO services, number of days the user has signed on, and user category. In addition to providing information, the user record allows the instructor to change the record, leave a message for the user, or change a course of study.

Group Data

Information about your group can be reached from a display similar to figure 3-5. From this display you can see background information about the group file, a listing of other files associated with your group, and information about the kinds of security codes required to use the group. This information can be accessed from three options on the display: group information, associated files, and security codes. This display is referred to as the group directory.

```
Group name ----- medicine (2 parts) Disk pack -- eagnast
Starting date --- 11/13/81           Account ---- mktgrps

Last edited ----- 11/13/81 16.49.58
      by ----- jean price of field
      . at ----- 9-26
last action ----- Change group description
```

Type the appropriate letter: >

- a. Group information
- b. Associated files
- c. Security codewords

HELP available

Figure 3-5. Group Directory

From this display you can see general information about the group file, other files associated with the group file, and security codes assigned to the file.

To reach the display shown in figure 3-5, choose the "Group operations" option from PLATO Facilities by typing the letter in front of the option. Either press DATA to see information about the group in which you are registered, or type the name of another group to which you have access, and press NEXT.

Authors can reach a group file by typing the group name on the Author Mode display.

General Group Information

This option stores general information relating to the group. It includes the name of the person responsible for the group, the kinds of users who are registered in the group, and a short description of the purpose of the group.

To enter or change general group information, type the number in front of the information to be changed. Type the new information and press NEXT. Identifying the group owner and audience is particularly important whenever more than one person can edit an account. Proper identification of the group owner, audience, and purpose of the file can prevent accidental deletion of the file by an account director.

Associated Files

This option allows you to identify other files your group relies on. Associated files specify the curriculum students will study, the file storing notes students write about lessons, student personal notes, and so on. Some examples of the kinds of files you might use with your group file are:

Student Notes file

A file in which students write notes to the instructor or comment on lessons they are studying.

Datafile

A file instructors can use to see data collected on lessons and the curriculum. It is usually used for formative evaluations.

TERM-ask group

A group listing authors and/or instructors who are available to answer questions of students in this group.

Processor lesson

A user-written editor to be used instead of the PLATO group editor described here. (An editor is simply a lesson used to insert, change, or inspect information. The PLATO group is an editor because it is a lesson used to create, inspect, or change information about students. The options in the PLATO group editor are a general set, anticipated to be needed by most instructors. When more flexibility is required, a special editor can be written. This lesson is identified as the processor lesson because it is used to "process" or read and change the group's data). Most instructors will never need to designate a processor lesson.

Router

A file that controls lesson sequencing and selection and generally directs decisions regarding a student's progress through a curriculum. Either the PLATO network router ("mrouter"), or PLM (PLATO Learning Management) can be used. A new router can also be written to meet a particular set of curriculum needs. Some curricula in the PLATO catalog use other routers, specific to one course or curriculum.

Instructor file/or curriculum file (if using PLM)

A file that contains curriculum design and course contents. An instructor file is used only if the group uses the PLATO network router, "mrouter"; otherwise, the designed curriculum and its contents must be incorporated in the router lesson (PLATO Learning Management curriculum files are used with a router named "plm". A special PLM group is needed for the PLM router and curriculum file.) Both instructor files and curriculum files can be used by more than one group at a time.

To attach a file to your group, type the number in front of the desired option, type the name of the file you want to attach, and press NEXT.

Security Codes

This option allows you to set the security codes for your group. You can allow only group members to see and/or change the file, allow only account members to see and/or change the file, or limit access to you or a set of people who know a security code. This option also allows you to choose to allow operations personnel access to the file. Refer to the following paragraphs to learn more about security codes and group security.

Group Security

Instructors and account directors are responsible for group security. The group contains both general information as well as student records. Because of the confidential nature of student data, it is important to control which users are allowed to see the file. Just as instructors in conventional instructional and training settings do not want students or others to see their gradebooks or student records, neither do PLATO instructors.

Group information and student records can be kept secure and confidential by using codewords. Codewords are similar to passwords in that the codeword is checked before users are allowed to see or change a group. The person who creates the group is initially responsible for assigning codewords. If someone creates a group for you, change the codewords the first time you use the file so only you know the codewords to the file. Codewords can be set to allow some users or sets of users different access. For example, by inserting a code that only you know you can set the security codes of a group so that only you can see or change the file. Or you can allow only authors and instructors within your group or account to see and/or change the file. The following are examples of different types of security codes you can set.

Typed code	Requires all users to type the security codeword to see and/or change the group file. Instructors whose records have been set to permit access to the group file are not required to type the security codeword. Refer to Creating Instructor Records later in this section for more information.
Group code	Allows all authors and instructors listed within a named group to see and/or change the group without typing a codeword.
Account code	Allows all authors and instructors in groups listed within an account to see and/or change the file without typing a codeword.
Unmatchable code	Prevents all users (except designated instructors in the group) from seeing or changing the file. Refer to Creating Instructor Records later in this section for more information.

It is important to be creative when assigning codewords. If you use a typed code, be sure it is something no one can guess. Do not use obvious codes like your spouse's name; the name of your group, account, or file; your pet's name; your telephone number; a period; a, b, c, and so on. Choose something with which only you can identify. Change your codewords frequently to prevent the possibility of some unauthorized person gaining access to your group. Examples of good typed codewords are misspelled words of at least seven characters or words with numbers inserted in them, words spelled backward with one or two numbers inserted, or a combination of several short words.

Since curriculum design information and student data are available through the group, instructors should be very selective about which persons edit the group. When you give access to the file, you give the right to see, change, and/or destroy records. Before assigning group or account codes, carefully determine whether or not you want all persons within the group or account to have access to the group.

One of the security options in the group is the "System access" option. It lets you choose whether or not to give system personnel (users responsible for delivering the PLATO services) access to the group. System personnel occasionally need to check files for errors if hardware problems occur. If you choose to allow system personnel access to your file, authorized personnel can inspect the file, without typing a security codeword. They cannot change or destroy the contents of your file, however.

All security codeword settings are done from the display pictured in figure 3-6. The following steps describe how to reach this display and how to set and change codewords and the "System personnel access option" for the group file.

1. From PLATO Facilities, choose "Group operations" by typing the letter in front of the option. Either press NEXT for your group, or enter the name of a different group. A display similar to figure 3-7 appears.
2. From this display (figure 3-7), press DATA. You will see three options (figure 3-5).
3. Choose "Security codewords" by typing the letter in front of it. The next display (figure 3-6) allows you to assign security codes.

From figure 3-6, you can do any of the following.

- The "To change group" option determines which users or groups of users can have access to change (edit) the group file. To choose this option, type the number in front of it. Do one of the following depending upon the type of access you want to allow.
 - To allow editing access to yourself only, type a codeword only you know and press NEXT. A random number of X's appear to the right of the arrow as you type. You will be asked to retype it to verify its accuracy and help you remember it. Press NEXT.
 - To allow editing access to all authors and instructors in your group who have the group access option set to "yes" in their user records, press LAB. You will see a "group" option and an "account" option. Type the number in front of the "group" option. (Refer to Author Options in section 4 to learn more about user record options.)
 - To give editing access to all authors and instructors in groups listed in your account who have the group access option set to "yes" in their user records, press LAB. You will see a "group" option and an "account" option. Type the number in front of the "account" option.
 - To prevent all users from seeing or changing the file, press LAB. Type the number in front of the unmatchable code option.
- The "To inspect group" option allows you to determine which users or groups of users can read information in the group. To choose this option, type the number in front of it. Do one of the following depending upon the type of access you want to give.
 - To allow inspect access to yourself only, type a codeword only you know and press NEXT. A random number of X's appear to the right of the arrow as you type. You will be asked to retype the codeword to verify it and help you remember it. Press NEXT.
 - To allow inspect access to all authors and instructors in your group, press LAB. You will see a "group" option and an "account" option. Type the number in front of the "group" option.
 - To allow inspect access to all authors and instructors in groups in your account, press LAB. You will see a "group" option and an "account" option. Type the number in front of the "account" option.
 - To prevent all users from seeing or changing information in the file, press LAB. Type the number in front of the unmatchable code option.

- To change either the inspect or change codewords, do the following.
 - Type the number in front of the option you want changed.
 - Type a new codeword and press NEXT, or press LAB to choose either group, account, or unmatchable codes.
 - Retype a typed codeword to verify it and help you remember it. Press NEXT.
- The "System access to group" option allows you to choose to give operations personnel access to your file. Type the number in front of the option to change it.

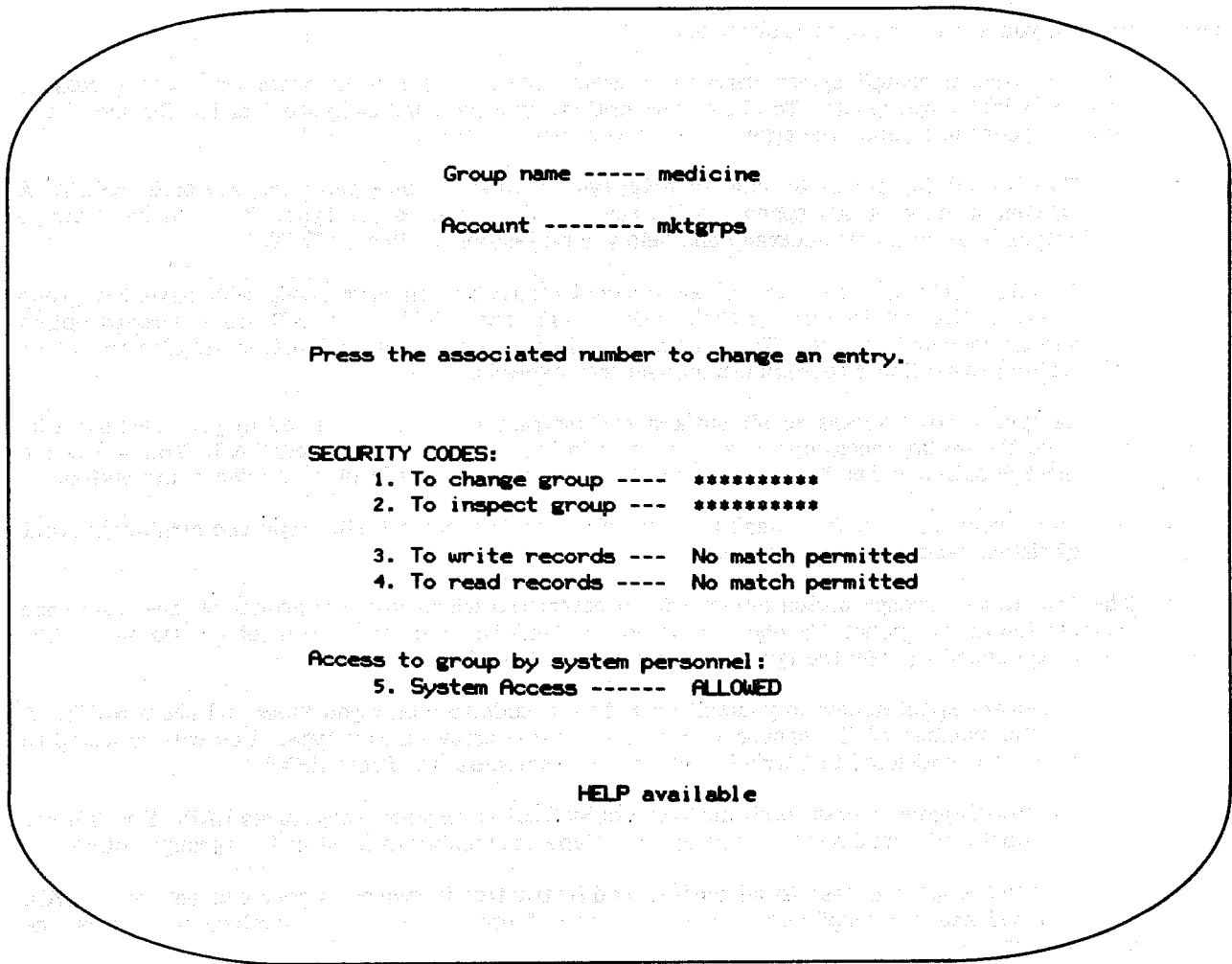


Figure 3-6. Security Code Settings
This display allows you to make security codeword settings for a group.

(authors)

Group "medicine"

2 people
25% full

Choose an option (or press HELP):

- 1 SEE or change someone's record
- 2 ROSTER operations (NEXT)
(list, add, delete, messages, who's running)
- 3 STATISTICS on records
- 4 CURRICULUM design
- 5 SPECIAL options

Press BACK to leave.

Press LAB for space usage information.

Press DATA for group description.

Press SHIFT-NEXT for people currently running.

Figure 3-7. Group Operations

This display is an index to administrative and curriculum design options.
Pressing DATA from this display causes figure 3-5 to appear.

GROUP OPERATIONS

The most frequently used PLATO Facilities option is "Group operations". It allows you to add or delete students from your group, see a list of all group members, change student records, and do other administrative procedures.

The group options described in this section are ones instructors use most often. Both a description of the option and how-to information is given. (Refer to Additional Instructor Options later in this section for information on group options used less frequently.)

Registering Students

As an instructor, you can register (roster) users in your group. The following steps describe how to add a student to your group.

1. Choose the "Group operations" option from PLATO Facilities by typing the letter in front of the option.
2. Select "Roster operations".
3. Select "Add someone to the roster".
4. Follow the displayed instructions.

Deleting Students

This option allows you to remove students from your group, either one at a time or all students at once. When you delete a user from your group, you permanently delete that user's file or user record. (To temporarily turn off a record, without destroying it, refer to Inspecting/Changing Student Records later in this section.) The following steps describe how to delete users from your group.

Deleting Individual Students

1. Choose "Group operations" from PLATO Facilities by typing the letter in front of the option.
2. Select "Roster operations".
3. Select "Delete someone from the roster".
4. Follow the display instructions.

Deleting All Students

1. Choose "Group operations" from PLATO Facilities by typing the letter in front of the option.
2. Select "Special options".
3. Select "Delete all records".
4. Follow the display instructions.

Listing All Group Members

This option allows you to list all the people registered in your group. From this listing, you can choose to see an individual user's record to review or delete it. The following steps describe how to see a listing of all group members.

1. Choose "Group operations" from PLATO Facilities by typing the letter in front of the option.
2. Select "Roster operations".
3. Select "See the roster of people".
4. Type the name or number of the user's record you want to see. Press NEXT to see the record or press SHIFT-HELP to delete it.

Inspecting/Changing Student Records

This option allows you to see or change a student's record. Use it to check a student's progress in a lesson or curriculum, change a user's password, or change an author's privileges. The following steps describe how to change a user record.

1. Choose "Group operations" from PLATO Facilities.
2. Select "See or change someone's record".
3. Type the PLATO name of the record you want to see and press NEXT.
4. Select the option describing the desired record change.
5. Follow the display instructions.

Leaving a Message

As an instructor, you can leave a message for the members of your group. The group members see the message when they sign on (immediately after typing their passwords). Messages can be displayed to one user, all group members, or specific user types (student, instructor, author). The following steps describe how to leave a message for your group.

1. Choose "Group operations" from PLATO Facilities by typing the letter in front of the option.
2. Select the "Roster operations" option.
3. Select the "Leave a message for someone" option.
4. Follow the display instructions.

You can also send a one line message to group users while they are signed on. The message is displayed at the bottom. The message can be displayed to everyone, selected user types, or specific individuals. To leave a one-line message for on-line users:

1. Choose "Group operations" from PLATO Facilities by typing the letter in front of the option.
2. Select "Roster Operations".
3. Select "See who is now running".
4. Select "Send message to someone".
5. Follow the display instructions or press HELP for more information.

USING THE PLATOSCRIBE ROUTER ("s/scribe")

The PLATOSCRIBE router "s/scribe" gives you access to the following collection of PLATO features.

- **Prints (screen/file).**
- **Graphics (GUIDE).**
- **Personal Notes.**
- **General Notes.**
- **Teleconferencing.**
- **PLATO AIDS.**
- **File management (files).** You can create such files as notes files, Documentor files, and GUIDE files. You can also delete, rename, copy, lengthen, and shorten files that you create.
- **TERM-spell.**
- **TERM-calc.**
- **TERM-talk.**
- **TERM-time.**
- **Documentor.**
- **NOS access.**

All these features except PLATO AIDS and NOS access are discussed in sections 1 through 4 of this manual. You may also read about any of these features in AIDS. At the AIDS "What PLATO feature" arrow, type the names of any items you want to read about.

Your account owner or director will determine whether or not you will be able to use the PLATOSCRIBE router. Contact that person if you have questions about the availability of this application.

USING YOUR ACCOUNT

Your PLATO account contains a definition of the PLATO services your organization purchased. It contains information on the number of people who can use PLATO services simultaneously; keeps a running record of the names, types, and number of files in your account; and provides administrative tools for managing the account.

A file is a finite set of data. The space within the computer system that stores this information is called a disk part (disk parts are defined, finite subsets of a file). Group records, notes files, lessons, and so on are examples of files. Each stores a different kind of information. Think of a file as a book, a disk part as a chapter, and a record as a section within a chapter.

Each account maintains a tally of the disk parts it uses. The person responsible for the account is the account owner. The account owner is designated and identified by his/her PLATO name within the account when the account is created. The account owner manages, creates, and lengthens files, and controls which users can see account information.

Account owners can delegate their responsibilities to other users in the account. Persons who have been delegated account authority are often called account directors. (There are several different levels of account authority; not all persons with access to account information are account directors. Refer to Using an Account Access List in section 5 for more information on account access levels.) As an instructor, your account owner might give you the authority to use the account. This might enable you to create files for yourself and other people in the account. If you can use the account, or are assigned account director responsibilities by your account owner, refer to Using Account Options (section 5) to learn more about account functions and responsibilities. If you are not an account director or do not have account access, contact your account owner or director if you need new files or more space in files you are using.

As an instructor, you can see information about your account if your account owner or director gives you access. The following steps describe how to reach your account.

1. Choose "Account transactions" from PLATO Facilities by typing the letter in front of the option.
2. Type the name of your account and press NEXT. Type the security code (if required) and press NEXT. You will see a list of options (figure 3-8).
3. Press DATA from this display (figure 3-8). General information about the account and specific information about account and file security are displayed (figure 3-9).

General account information is available from the directory pictured in figure 3-9. It provides the name of the account owner and stores the security codes that control user access to the account. It also contains information on the date the account was last changed, the name of the person who changed it, and the change that was made.

To learn more about accounts, refer to Using Account Options (section 5).

Account ----- pboff on pce

Disk parts in use ----- 1002

NEXT for file management options

- a. Display file data
- c. Current users in this account
- d. Report generator options
- e. Group records report generator
- f. Archive options
- g. Print access control options
- i. Inter-account options
- j. Network options
- k. Transmit PLATO files to NOS

DATA for General Account Information

HELP available

Figure 3-8. Account Options

This display gives you a list of several account and file management options.


```

Account ----- mktho on pce
Account Owner ---- greg witt / field

Disk parts remaining - 8
Disk parts allotted -- 488      HELP is available.
Files in account ---- 182
Subscriptions ----- 8

1. Inspect code ----- XXXXXXXXXXXX
2. Data change code ----- XXXXXXXXXXXX
3. File change code ----- XXXXXXXXXXXX
4. Access by system personnel -- ALLOWED
5. Account access list ----- This account file

a. Lesson Notes File -----
b. Default file change code ---- XXXXXXXXXXXX
c. Default file inspect code --- XXXXXXXXXXXX
d. Network log datafile ----- mkthosna
e. Network alternate log file -- mkthosnb

Press the number or letter to change an item.
Press      DATA for lesson access classes for this account.
Press SHIFT-NEXT to inspect or edit the account access list.

Account last changed on 11/13/81 at 3:43:48 pm
by / jean price / field at station 9-26

change account security code

```

Figure 3-9. Account Directory
This display allows you to see general information about your account, as well as specific information about account and file security.

REVIEWING AND STUDYING LESSONS

As an instructor, one of your responsibilities is to assign lessons for students to study. You should review lessons and curricula to examine their content and determine their applicability to your needs. You can also review lessons to familiarize yourself with the learning materials, to write test questions, or to determine whether or not to assign additional learning resources to accompany the lessons.

You can review any published PLATO lesson your account has contracted to use. Published courses are copyrighted and are available on all systems offering PLATO services. Before the courses are published, they are tested and reviewed to ensure that the lessons operate properly, that all function keys work as described, and that there are no coding errors which could cause the lesson to work incorrectly. Published courses are well maintained and reliable. They are never unexpectedly revised or deleted.

All published lessons are included in one of several PLATO libraries. Each account contracts for access to specific libraries. You can see any lesson in the library(s) for which your account contracts. A list of the libraries is available to you from the account directory (figure 3-9). The Catalog of Published Courseware contains a listing of all published PLATO lessons and courses. (Refer to Using the Catalog of Published Courseware in section 4 for a description of the differences between published and proprietary lessons and courses and for instructions on using the catalog.)

To review lessons or curricula, either use the Catalog of Published Courseware to see an individual lesson (refer to Using the Catalog of Published Courseware in section 4) or create a student sign-on for yourself to use a curriculum.

The following steps describe how to review published PLATO lessons.

1. Select to "Choose a lesson to study" from PLATO Facilities by typing the letter in front of that option.
2. Type the name of the lesson you want to see and press NEXT. You will be shown the lesson you requested. Published lesson names can be obtained from the Catalog of Published Courseware. Lessons written and maintained by members of your organization are listed in your account.

PLATO COURSES AND CURRICULA

PLATO lessons can be presented to students in various ways. As an instructor, you determine how your lessons are presented and also how much flexibility to give your students while studying them. Most students are assigned a curriculum to study. A curriculum is a study plan concentrating on a specific topic or subject, or set of topics.

Curricula can be presented to students in different ways, depending upon some choices you make. Some curricula are composed of several modules. A module is a group of lessons that relate to the same basic subject. Each lesson in the module presents instructional materials that concentrate on a different area or aspect of the module topic. The combined lessons and modules compose the curriculum (figure 3-10).

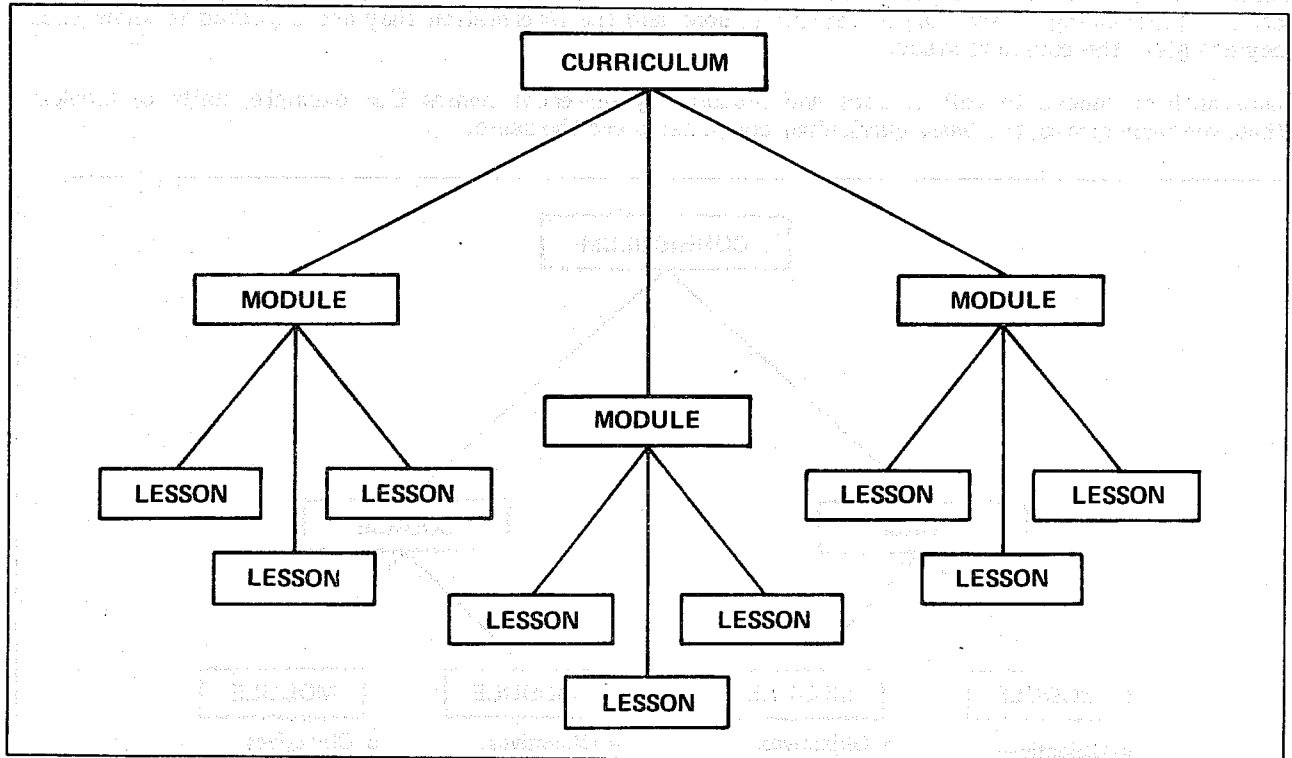


Figure 3-10. A PLATO Curriculum
An example of how lessons and modules compose a curriculum using "mrouter".

Other curricula are composed of several courses. A course is a complete learning package concentrating on a specific topic or subject area of the curriculum. It contains modules that can present objectives, provide instructional lessons, administer tests, and suggest study materials (refer to figure 3-11).

Most curricula are designed to meet the individual student needs. Curricula can be designed to allow differing degrees of flexibility to students studying them. Some curricula are designed to allow students to choose the order of the lessons they want to study, while others require lessons to be studied according to a specified sequence or established hierarchies of prerequisite and more advanced lessons. Some curricula give students the option to take a test before studying a lesson. Usually, if they pass the test, they are not required to study the lesson. Taking a test before studying the lesson materials helps students know what they should concentrate on, and lets them preview the test questions. Many curricula include a statement of the objectives for the modules and lessons. These objectives help students get a better understanding of the purpose of the lessons and the information they are expected to know once they complete the course of study.

Some authors choose to call courses and modules by different names (for example, units or blocks). Whatever their names, the basic curriculum components are the same.

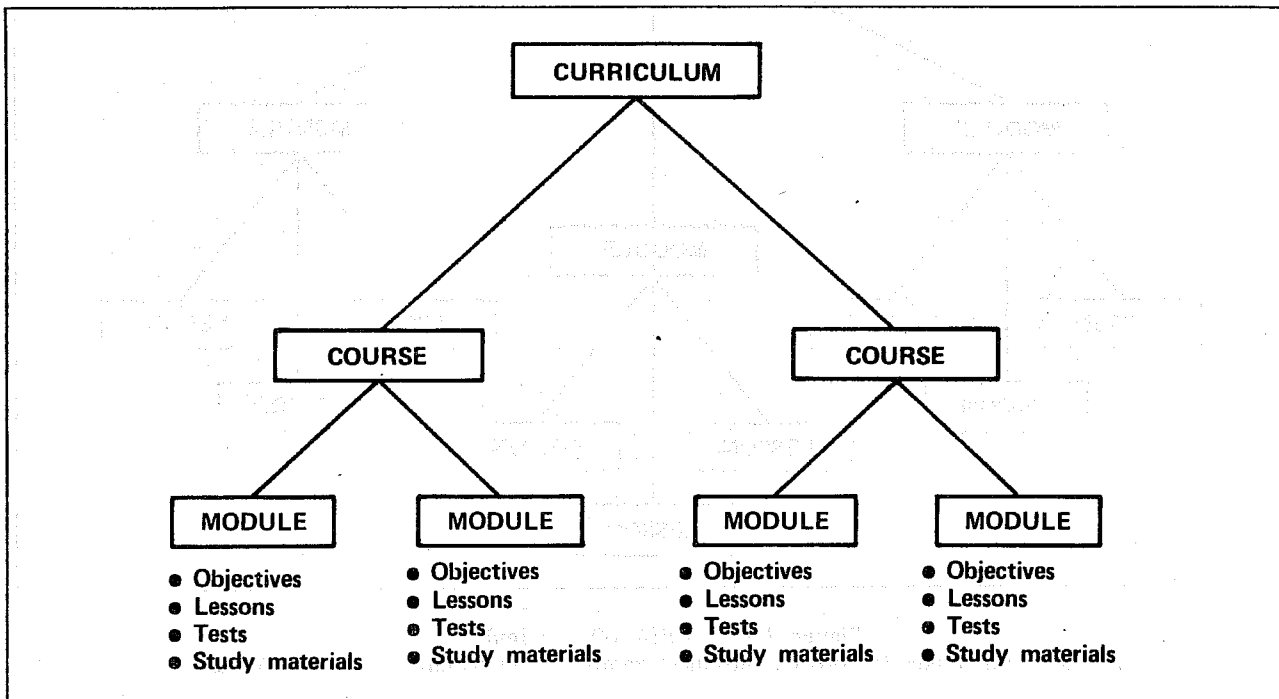


Figure 3-11. A PLATO Curriculum
An example of how courses, modules, and lessons
compose a curriculum using PLATO Learning Management.

Designing a Curriculum

Planning a course of study is called designing a curriculum. Several factors are involved. The first is deciding what the curriculum should accomplish. This sets the instructor's curriculum needs and also helps the instructor select the best instructional management tool for these needs. Some examples of things to consider when determining curriculum objectives are: the student population studying the curriculum, the difficulty of the subject, and the time frame.

There are several ways to select a curriculum. One is to choose a published curriculum from the Catalog of Published Courseware (section 4), and assign it to your students. A published curriculum contains a preselected series of lessons, usually arranged in modules, which relate to the same subject area. As an instructor, you simply assign the published curriculum for your students to study. Another way is to choose either individual lessons or sets of individual lessons from the Catalog of Published Courseware or your account to include in a curriculum of your own design. You select the lessons you want included in your curriculum and either arrange them into modules, or index them in a list.

Curricula are assigned for specific groups of students. PLATO features allow you to individualize the curriculum for your students. For example, even though all students in the group are registered for the same curriculum, not all students must study all the lessons in it. You can specify which lessons should be studied by which students; vary the order or sequence of lesson presentation; allow the students to choose which lessons they want to study first, second, and so on; and have students tested on lessons and record their progress.

Instructional Management Tools

Instructional management refers to curriculum design, individualization, and record keeping. PLATO features include four instructional management tools: index lessons, PLATO Learning Management, the PLATO network router, and custom routers. Each has its own set of features, though some overlap.

A router is a PLATO lesson with special data collection capabilities that is used to organize and present lessons to students. Instructors use routers to list and group all of the lessons to be used in a course or curriculum, to indicate which of several ways they would like to see a given curriculum presented, and to monitor student scores and progress. Routers then present these organized sets of lessons to students as module and lesson indices and collect progress data. Therefore, the same router looks different to instructors and students. Student views of two routers are presented in Taking Plato Lessons in section 2. Instructor views of the same two routers are presented in this section.

Definitions of all four kinds of routers are included in this section. Table 3-1 summarizes the options for all four routers. Use it to choose the kind of router you need.

Index lessons

An index lesson is a lesson written by an author using the PLATO Author Language or Micro PLATO Language. It presents a set of choices on an index to students. Index lessons are usually used for very straightforward curricula requiring little to no student data collection. Instructors usually use index lessons as they exist. Options to make changes to index lessons are rarely available to instructors.

The PLATO router ("mrouter")

The PLATO router, "mrouter", contains the mechanics for presenting a list of lessons or a set of modules (lesson lists) to students. Since "mrouter" is a delivery system used by many instructors simultaneously, it does not contain specific information about which lessons to present, the order of lesson presentation, or what criteria are required to master each curriculum. This information is supplied by each instructor in an instructor file which "mrouter" reads and uses. The PLATO router also collects basic student data for instructors to evaluate student progress and performance.

PLATO Learning Management (PLM)

PLATO Learning Management (PLM) is similar to "mrouter" in that it directs the student through a curriculum and is used by many instructors simultaneously. PLM, however, has many additional features. As its name implies, PLM has management capabilities. It allows the organization of both PLATO materials and other instructional media into modules and courses which compose a PLM curriculum. Some of PLM's management capabilities allow users to:

- Provide an introduction to the curriculum for students.
- Enter learning objectives associated with all learning materials.
- Enter test questions and instructions for their presentation. Test preparation does not require any programming knowledge.

For more information on PLM, refer to the on-line reference manual (PLM Aids) or the PLATO Learning Management Instructor's Guide.

Router lessons

A router is a lesson written by an author using the PLATO Author Language or the Micro PLATO Language. A router is written when an instructor has some special curriculum design requirements that are not available in "mrouter" or "plm". Like "mrouter" and "plm", such routers allow instructors to organize curricula and then present those curricula to students.

Table 3-1 summarizes the features and capabilities of PLATO instructional management tools. Refer to the table to select the tool which best meets your curriculum design needs. Then refer to the appropriate following section to learn how to design your curriculum using a particular instructional management tool.

Table 3-1. Curriculum Design Options

Curriculum Design Options	Index Lesson	"mrouter"	PLM	User Written Router
Curriculum introduction	P	-	S	P
Total touch input; no keyset input beyond sign-on	P	-	-	P
Touch input for test questions	P	-	S	P
Can display objectives to students	-	-	S	P
Shows students their scores	-	-	S	P
Requires testing for student placement	-	-	S	P
Allows specification of prerequisites	-	S	S	P
Sequence of lessons; no index available	-	S	-	P
Allows review of completed material	-	S	S	P
Module indices	-	S	S	P
Assigns text, A/V, network and/or microcomputer instruction	-	-	S	P
Suggests study assignment options	-	-	S	P
Introduces study assignments for all media	-	-	S	P
Maximum number of lessons per curriculum	-	80	1500	P
Maximum number of modules per curriculum	-	20	420	P
Maximum number of modules per course	-	-	28	-
Maximum number of courses per curriculum	-	-	15	-
Student statistics by module	-	S	S	P
Student statistics by curriculum	-	-	S	P
More extensive student data than "mrouter".				
S Standard option.				
P Programmable option.				
- Not available.				

Using Index Lessons

An index presents a list of lessons for students to study.

Index lessons do not ordinarily store any information. They are usually used when instructors do not want to keep student or lesson data. They are used when the module structure of "mrouter" or PLM is not required.

Before you can write an index lesson, you need an author sign-on and a working knowledge of the PLATO Author Language or the Micro PLATO Language. If you do not know these languages, contact your account owner for help or for information on how to learn them.

When you are ready to begin writing your index lesson, contact your account owner to create a lesson in which to store your code, and to give you an author sign-on to reach the file.

Using the PLATO Router ("mrouter")

The network lesson delivery system, "mrouter", contains the mechanics for presenting lists of lessons (modules) for students to study. In addition to presenting lessons, "mrouter" can collect data on individual student progress and performance, as well as group data. You can see information on the number of days, hours, and sessions each student used PLATO instruction, or the average time for all students in the group. Information on lessons students completed and their test scores is also available, as well as the average score for all students in a lesson.

Since "mrouter" is a lesson delivery system, it does not contain specific information about any one curriculum design. It is a mechanism that presents many curricula. Curriculum specific information is stored in an instructor file. An instructor file contains specific information about each curriculum "mrouter" delivers. This information includes the file names and titles of all the lessons in the curriculum, lesson presentation order, the module number and structure, and the criteria for mastering modules in the curriculum. Essentially, the instructor file tells "mrouter" what lessons to present to the student, and when and how to present them. The basic presentation format is supplied by "mrouter". Lesson "mrouter" allows all instructors to create their own curricula by filling in the lesson names and information about the lessons. It provides a curriculum design tool for non-programmers.

Each instructor file contains a curriculum catalog, which stores the file names and titles of the individual lessons that compose the curriculum. The lessons contained in this curriculum catalog are selected from either the Catalog of Published Courseware, or from other sources (such as unpublished lessons written by other authors and maintained in their accounts). From the lessons listed in the curriculum catalog, modules are created by grouping lessons.

There are two ways to use an "mrouter" curriculum. One is to create your own curriculum by selecting individual lessons, listing them in the curriculum catalog, and inserting them into modules. Another way is to select a published "mrouter" curriculum from the Catalog of Published Courseware. Many published curricula are organized in instructor files for use with "mrouter". A published instructor file contains a completed curriculum catalog, definitions of the curriculum's modules, and mastery criteria for each module.

When you select a published curriculum, you use that curriculum's published instructor file instead of creating one of your own. The only time you need to create an instructor file and insert information in it is when you are creating a curriculum by choosing individual lessons from the Catalog of Published Courseware, arranging the lessons into modules, and establishing criteria for completing the modules. Your account owner can create an instructor file for you if you do not have account director capabilities.

The following sections describe how to use "mrouter" with a published curriculum and when designing your own curriculum.

Using the PLATO Router with Published Curricula

Follow these steps to attach a published curriculum to your group.

1. Choose "Group operations" from PLATO Facilities by typing the letter in front of the option. Enter the name of the group in which students using the published "mrouter" curriculum will be registered. You will see a list of group operations (refer to figure 3-7).
2. Press DATA. The display pictured in figure 3-5 appears.
3. Choose "Associated files" . You will see a display similar to figure 3-12.
4. Locate the router section of the display. Choose "Student router".
5. Type "mrouter" and press NEXT. You will be asked for the name of your instructor file.
6. Type the name of the instructor file you chose from the Catalog of Published Courseware and press NEXT. You will be asked for the "use" codeword. The "use" codeword for all published instructor files is the same as the name of the instructor file. Type the instructor file name again and press NEXT. You can now register students to use the curriculum.

```
Group name ----- medicine
Account ----- mktgrps

Press the associated number to change an entry.

Student notes:
  1. File name -----

Data collection:
  2. File name -----

TERM-ask group:
  3. Group name -----

Processor lesson:
  4. File name -----
  5. Access privileges --

Routers:
  6. Student router ----- mrouter
  7. Instructor router -- imode

Instructor file:
  8. Instructor file ----
```

Figure 3-12. Files Associated with a Group
From this display, an instructor can designate "mrouter" as the lesson delivery tool for a group file, as well as attach other files to the group.

Using the PLATO Router with Your Own Curricula

Follow these five steps to use "mrouter" with a curriculum of your own design (before you begin, read the reference materials in AIDS on "mrouter" to get a thorough understanding of its intended uses).

1. Attach "mrouter" and an instructor file to the group file.
 - a. Follow steps 1 through 5 in Using the PLATO Router with Published Curricula.
 - b. Type the name of your instructor file and press NEXT. (Remember to contact your account owner to create an instructor file for you if you are not an account director.) Enter the codeword when requested if your account owner assigned a typed code. (Refer to Group Security earlier in this section for more information on security codes.)
 - c. Press BACK twice to return to the group options (figure 3-7).
 - d. Go to the instructor file by choosing "Curriculum design". If no codewords were assigned to your instructor file when it was created, you will be brought to a display containing registration and codeword information on the instructor file (figure 3-13). Once the requested information is completed, you can reach this display by pressing DATA from Curriculum Options (figure 3-14). Assign codewords to the instructor file and enter the descriptive information to prevent accidental deletion of your file during account cleanup.

Instructor File Information:
jeanif

1. "change" codeword: *****
2. "use only" codeword: *****
3. Name of Owner: jean price
4. Group(s) for which this file is used:
 jeansgrp

Type the number of the entry you want to change.
(This information must be filled in before the
file can be used.)

Figure 3-13. Instructor File Codewords

This display allows you to assign codewords to prevent unauthorized users from changing or using your instructor file.

2. Insert lesson information in the curriculum catalog.

- a. After you attach an instructor file to your group, the "Curriculum Design" option appears with the group options (refer to figure 3-7). "Curriculum Design" appears only after an instructor file is attached to your group file, because the instructor file is the storage place needed before any design can begin. Choose Curriculum Options (figure 3-14) by typing the letter in front of "Curriculum Design" on figure 3-7. From Curriculum Options, choose to "See catalog of lessons" to insert your lesson list in the curriculum catalog. This list consists of all lesson file names and lesson titles to be used in all modules of your "mrouter" curriculum. Follow the instructions at the bottom of the display to insert lesson information. To copy an instructor file or curriculum catalog from another curriculum, or to delete a lesson or change lesson names, use "Special curriculum options" on the Curriculum Options display.
- b. Press HELP from the Curriculum Options display and read the section titled "The Curriculum Catalog" for more detailed information on the curriculum catalog and how to use it.

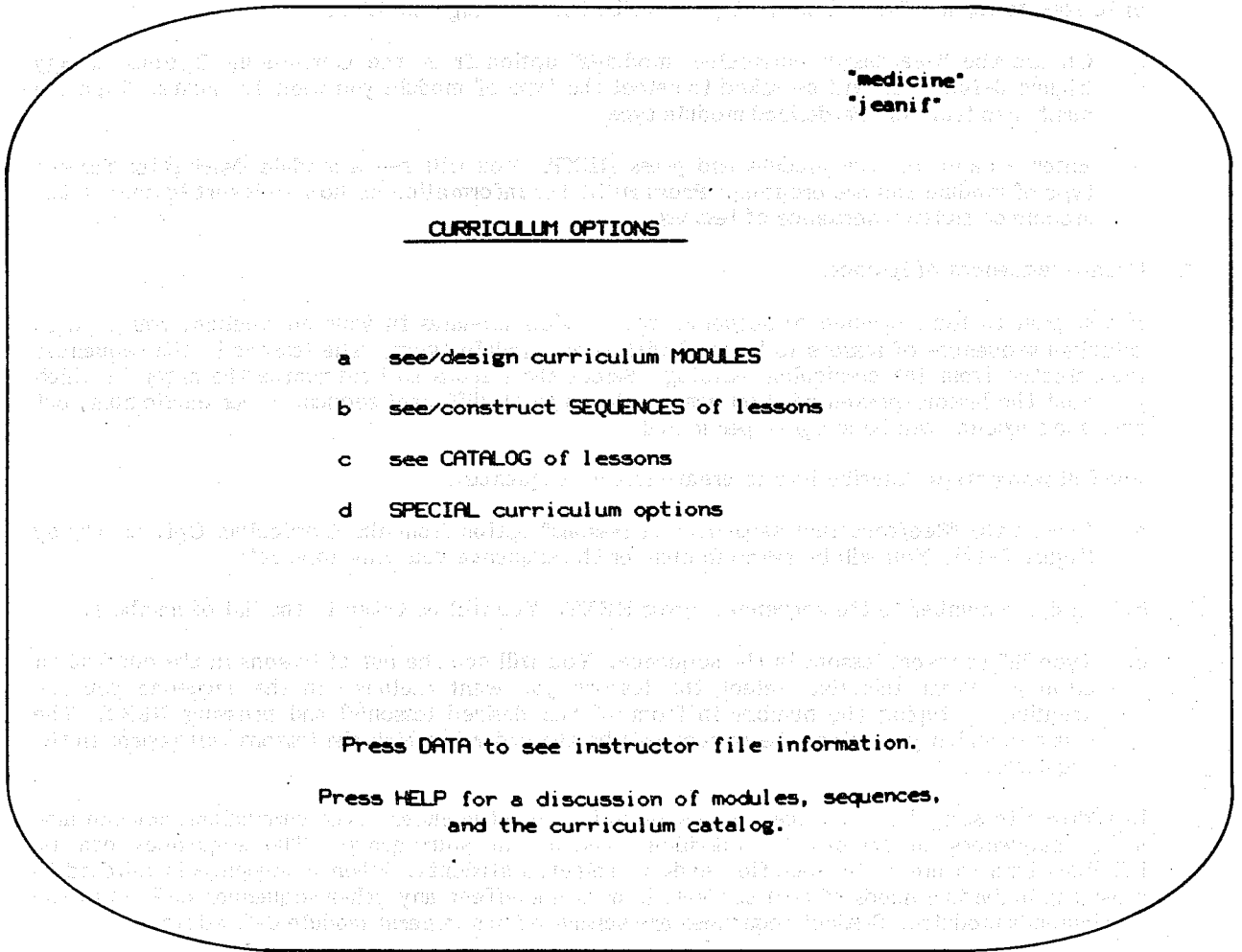


Figure 3-14. Curriculum Options

3. Design modules. There are three types of modules you can use in your curriculum.

- **Index module - Contains a list of lessons and/or sequences. The lessons may be selected in any order by the student and any lesson may be reviewed.**
- **Sequence module - Contains a list of lessons for students to study in a specified order. You specify which lessons the students will study and the order in which the lessons are studied. Each lesson is presented immediately after the previous lesson is completed. Students must study the lessons according to the specified sequence and do not see an index from which they can choose lessons.**
- **Sequence with review module - Contains an index of lessons which expands as the student completes a lesson sequence. Students see a list of completed lessons. They can review previously studied lessons or continue with the next lesson in the sequence. This module is similar to the sequence module except it allows review of completed lessons.**

After you have determined the kind(s) of module(s) you want to use in your curriculum, you can begin designing modules by inserting individual lessons in the modules or by assigning sequences of lessons to them. The following steps describe how to design modules.

- a. Choose the "See/design curriculum modules" option from the Curriculum Options display (figure 3-14). You will be asked to select the type of module you want to create. Type the number in front of the desired module type.
- b. Enter a name for the module and press NEXT. You will see a module description for the type of module you are creating. Press HELP for information on how to insert lessons in the module or assign a sequence of lessons.

4. Create sequences of lessons.

If you plan to use sequence or sequence with review modules in your curriculum, you need to establish sequences of lessons to be used with those module types. The lessons in the sequences are selected from the curriculum catalog. Select the lessons and determine the order in which you want the lessons presented. You can create up to 10 different sequences per curriculum, but only one sequence can be assigned per module.

The following steps describe how to create lessons sequences.

- a. Choose the "See/construct sequences of lessons" option from the Curriculum Options display (figure 3-14). You will be asked to number the sequence you want to create.
- b. Assign a number to the sequence. Press NEXT. You will be taken to the list of numbers.
- c. Type "a" to insert lessons in the sequence. You will see the list of lessons in the curriculum catalog. From this list, select the lessons you want included in the sequence you are creating by typing the number in front of the desired lesson(s) and pressing NEXT. The order in which you select the lessons will be the order in which the lessons will appear in the sequence.

In addition to assigning sequences of lessons to individual modules in the curriculum, you can also assign sequences of lessons to individual students in your group. The sequences can be individualized to meet the specific needs of selected students. When a sequence is tailored to meet the individual needs of that student, it does not affect any other sequences defined in the curriculum's modules. Student sequences are separate from general module definitions.

To assign a specific sequence to an individual student, go to the student's user record in the group file, choose the "Curriculum status" option, and follow the instructions.

After you have created your modules and sequences, assign completion criteria as follows:

- **Score criterion** - Allows you to specify a minimum score for a lesson or a minimum score for all lessons in the module.
- **Item criterion** - Allows you to specify a specific lesson to be completed or a minimum number of lessons to be completed for that module.
- **Time criterion** - Allows you to specify either a specific date or time frame by which the students must complete the module.

To establish completion criteria for the module, press **DATA** from the module list (figure 3-15) and then press **EDIT**. You will be asked to select the type of criterion you want to use. Type the number in front of the kind of criterion you want to use and then follow the instructions. (For more detailed information, press **HELP** from the Curriculum Options display and read the section entitled "Completion Criteria for Modules.")

After you have created a module and pressed **BACK**, you will see a list of all the modules in your curriculum and summarized information about each (type of module, number of lessons in the module, and completion criteria for the module). From this display (figure 3-15), you can create new modules, change the sequence of modules, and change the titles of the modules. Press **HELP** from this display for how-to information.

Design Curriculum Modules		
2 in use		4 maximum
		"medicine"
		"jeanif"
NAME/ (TYPE)	* ITEMS	CRITERIA
1 one (index)	3	Complete 3 lessons Next: 2 Back: 1
2 two (index)	4	None specified Next: 2 Back: 1

See/Revise Module Number: >
 HELP available
 DATA to start a new module
 LAB to change module progression
 shift-LAB to change module titles

Figure 3-15. Module List

This display lists all the modules in your curriculum and provides summarized information about each.

Special Instructor File Options

"Special options" on the curriculum options display offers additional options to copy lessons from another curriculum catalog, copy another instructor file, revise the curriculum catalog, increase the number of modules in the curriculum, delete all modules and sequences, delete individual lessons from the curriculum catalog, and destroy the curriculum catalog.

Using PLATO Learning Management

PLATO Learning Management (PLM) is similar to the network lesson delivery system, "mrouter", in that it too supports curriculum design by instructors, presents lessons, and collects student data.

To use PLM, you need to create a PLM group file, or ask your account director to create one for you. Once you have your PLM group, you will need to prepare it to deliver a published curriculum, or one you design yourself.

Many of the steps in using PLM are similar to those for using "mrouter". The following describes how to prepare the PLM group file to deliver a published PLM curriculum.

1. Choose "Group operations" from PLATO Facilities by typing the letter in front of the option. Enter the name of the PLM group to which you will assign a curriculum and in which you will register students.
2. Press NEXT again and complete the requested group information, including the one-line description. Press BACK.
3. Choose "Associated files". A display similar to figure 3-12 appears.
4. Locate the "Curriculum file" option and type the number in front of it.
5. Type the name of the PLM curriculum file you want to use. Press NEXT. (Published PLM curriculum files are listed in the Catalog of Published Courseware.)

After you have prepared the group file, you should register students in the group. To do so, follow the same procedures described earlier in this section on Registering Students. The only difference in registering PLM students, is that you have the option to register students into sub-groups or classes. You can have up to 100 classes of students for each PLM group file.

Student progress and performance reports, as well as curriculum statistics are available with PLM. To see or collect this data, choose the "Statistics on records" option from the group options display (figure 3-7).

Refer to the following manuals for information about PLM and to learn how to use it.

- PLATO CMI* System Overview
- PLATO Learning Management Instructor's Guide
- PLATO Learning Management Author's Guide

Users should also refer to the PLM reference manual in AIDS. To use PLM Aids, choose the "PLM aids" option from PLATO Facilities.

* PLATO Learning Management (PLM) was originally entitled Computer Managed Instruction (CMI). Some documentation that refers to PLM in this manner still exists. Refer to the preface for publication numbers and ordering information.

Using a Custom Router

To write your own router, you need either an author sign-on or the assistance of someone with an author sign-on. For information on how to design your own router, refer to AIDS and the PLATO Author Language Reference Manual.

Using Datafiles

You can collect information on lessons in your curriculum with a datafile. It is a special file which collects and stores information on lessons that have been coded by an author to collect data. You can specify the kinds of data you want collected about the lesson. The lesson author, however, must have coded the lesson to allow data collection for data to actually be collected. Each datafile has a set of options that allow you to choose the kind of information you want collected. Use a datafile to collect student data relating to a specific lesson or set of lessons. Most instructors use datafiles for summative data collection (for example, to see a student's performance for the semester, or see how the class as a whole is performing). Most authors use a datafile for formulative evaluation purposes during the development of a lesson. Datafiles are not used with published lessons or curricula.

Datafiles are also used to collect area summaries for students in a group. Area summaries include such things as unanticipated responses from students to questions in a lesson, lesson HELP requests made but not received, and the amount of time a student spent in a particular part of a lesson. Output data is information that the author of the lesson has coded the lesson to collect. Output data can include information that is not covered in an area summary. The area summaries can be analyzed for several areas in a lessons.

The following are some examples of the kinds of information a datafile can collect.

- Student answers to questions in a lesson (correct answers and unanticipated incorrect answers).
- Ratio of right to wrong answers to questions.
- Student requests for HELP, both answered and unanswered.
- Number of TERM requests made and completed (answered).
- Searches of other datafiles for specific types of data on students, lessons, modules, and so on. These search options are available in any combination.

There are three steps to prepare a datafile to collect student data.

1. Create a datafile and attach it to the group file of the students for whom you want data collected.
2. Set the security codewords in the datafile to prevent unauthorized users from seeing or changing the contents of the file.
3. Set the data collection options within the group file to determine the kinds of student data to be collected in the datafile.

To create and attach a datafile to your group, do the following steps.

1. Create a datafile in your account (if you have account director capabilities) or ask your account director to create a datafile for you.
2. Choose "Group operations" on PLATO Facilities by typing the letter in front of the option. You will see the group operations display (figure 3-7).
3. Press DATA.

4. Choose the "Associated files" option.
5. Type the number next to the "Data collection" option. You will see an arrow.
6. Type the name of your datafile. Press NEXT.

To set the datafile security codewords, do the following steps.

1. Choose the "Datafiles" option on PLATO Facilities by typing the letter in front of the option.
2. Type the name of the datafile. Press NEXT.
3. Press DATA. You will see four options. Select an option by typing the number in front of it. The options are:
 - Change code Allows you to restrict which users can see and change information in the datafile. You can assign either a typed, group, account, or unmatchable security code for the datafile. (Refer to Group Security earlier in this section for more information on file security codes and how to set them.)
 - Inspect code Allows you to restrict which users can see information in the datafile. You can assign either a typed, group, account, or unmatchable security code for the datafile. (Refer to Group Security earlier in this section for more information on file security codes and how to set them.)
 - System access Allows you to choose whether or not to allow operations personnel access to the datafile. Type the number in front of the option to change the setting.
 - Print information Allows you to enter your name and mailing address to ensure that if you request a print of the datafile from the PLATO service center, it will be sent to you. (Refer to Requesting Prints in section 4 for information on requesting prints.)

To select the data collection options, do the following steps.

1. From group operations options (figure 3-7), choose "Special options" by typing a number.
2. Choose "Change group-wide data collection" by typing the letter in front of it.
3. Do one of the following, depending upon the type of data you want to collect:
 - a. Select "Change data collection" if you want to set data collection options for all students in the group. You will see a list of options. The options you select must either match the lesson's "dataon" tags or the lesson must have a blank "dataon" command. Talk to the lesson author to be sure your choices match in the datafile and in the lesson. Choose the options that relate to the type of data you want collected. After you make your selections, press NEXT. These options will then be set for all new students in the group (that is, any new students added to the group). To set these options for students already registered in the group, press SHIFT-HELP.
 - b. Select "Specify data collection" if you want a specific lesson to collect extra data beyond what is already specified for the group (in "Specify Data Collection"). (The lesson's "dataon" tags must match the options you select for the data to be collected.)
4. Press HELP for more information on data collection or refer to AIDS for a more detailed explanation of datafiles.

ADDITIONAL INSTRUCTOR OPTIONS

The options described below are the remaining group options available to instructors from PLATO Facilities. These options are usually used less frequently than those described earlier in this section.

Monitoring Group Members

You can see a list of all the group members who are currently using PLATO services. You can also see additional information such as the number of hours an individual has been signed on, the name of the lesson(s) being studied, the user category in which the person belongs, and so on. This option also allows you to monitor (see) another user's display. The following steps describe how to reach this option.

1. Choose "Group operations" from PLATO Facilities by typing the letter in front of the option.
2. Select "Roster operations".
3. Select "See who is now running".
4. Follow the display instructions.

Specifying Group Data Collection

You can see selected statistical information on students in your group. Formative evaluation information can be collected for individual students or for all students in your group in a datafile. The following steps describe how to collect group data.

1. Choose "Group operations" from PLATO Facilities.
2. Select "Special options".
3. Select "Change group-wide data collection".
4. Follow the display instructions.

Refer to Using Datafiles earlier in this section for information on how to create and use datafiles.

Templating Records

A template is a student record that is used as a model or pattern for other student records in your group. A templated record standardizes one or more areas of a student's record and then duplicates that area on other students' records. The student record that contains the original standardization is called the template. Passwords, lesson names, unit names, student variables, and curriculum options can be templated so that they are or will be the same on all records. Templates can be created for students who are currently registered in the group, new students to be added to the group, or both.

After you decide which student record you want to use as the template, go to the student record and set the options in the record according to how you want the other records in the group to be set.

NOTE

If lesson names and unit names are templated, all restart information is lost. If variables are templated, information on students' work may be lost.

The following steps describe how to set a template.

1. Choose "Special options" from PLATO Facilities.
2. Choose to "Set up a template record".
3. Select the first option if you want to set a template for all new students added to the group, or select the second option if you want to set a template for all existing students in the group.
4. Type the name of the student whose record is to be used as the template. All student records affected by the template will indicate this and identify the student user record used as the template.

Copying Records from Another Group

This option allows you to copy the record of a student registered in a group file other than your own to your group file. Choosing this option transfers a copy of the student record to your group file without deleting the record from the original file. The following steps describe how to copy a user record.

1. Choose "Group operations" from PLATO Facilities.
2. Choose "Special options".
3. Choose to "Copy a record from another group".
4. Type the name of the group from which the user record is to be copied and press NEXT.
5. Type the codeword for the group. Press NEXT.
6. Type the name of the user whose record you want copied and press NEXT. A message indicates completion of the copy.

Creating Instructor Records

When you create an instructor record, you see a number of options that can be made available to the new user. It is your responsibility to designate which of these options the new instructor should have. When you are deciding which options to allow, consider the position the new instructor holds and how much responsibility you want to delegate. For example, if you are creating an instructor record for a new teaching assistant, you may not want to give the option to change students' scores. Or if the new instructor is not involved with PLM, you may choose not to include the PLM options. Use your judgement to determine how much responsibility (that is, how many options) to initially delegate to the new user. An example of some of the available instructor options is shown in figure 3-16.

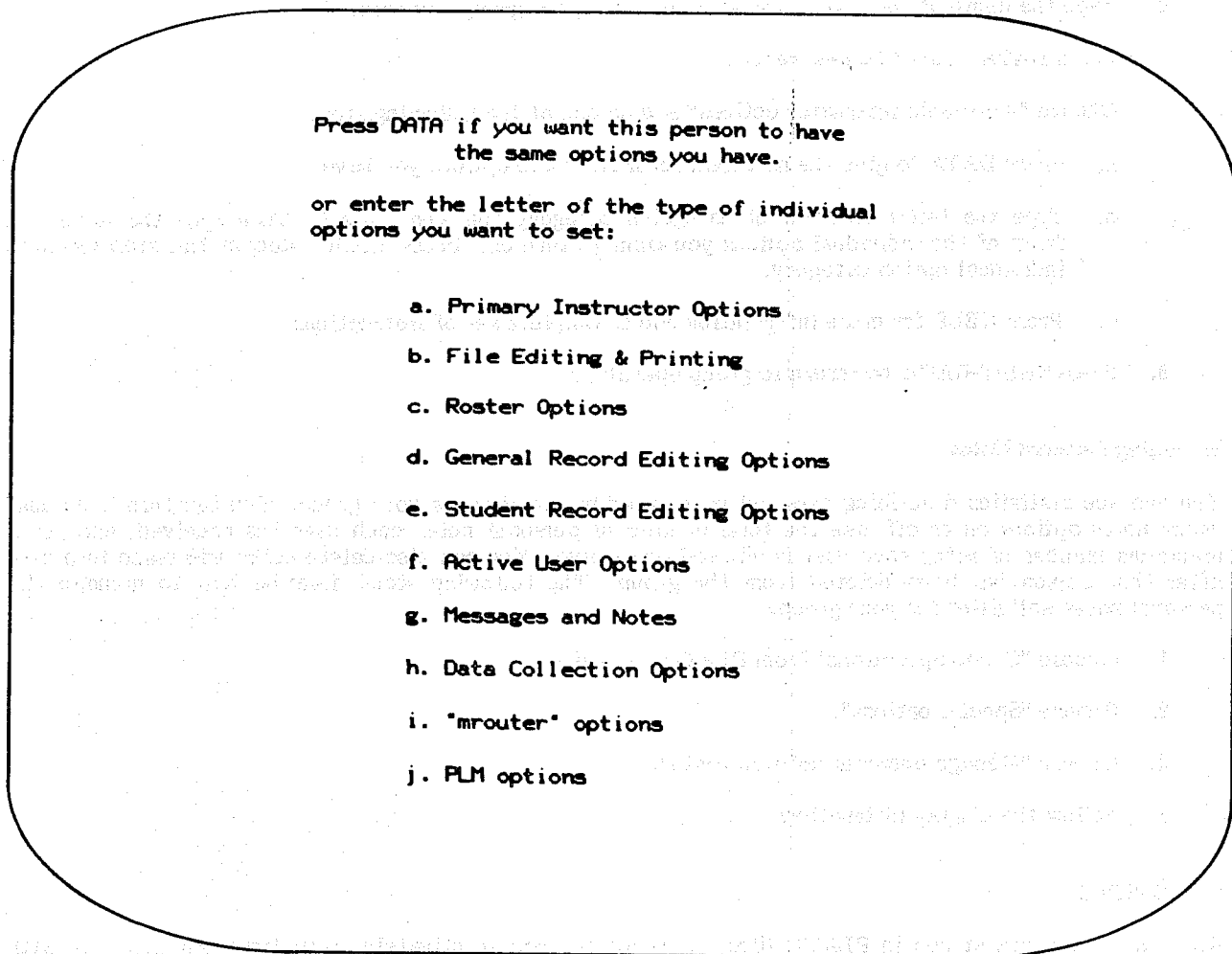


Figure 3-16. Instructor Options

This display shows some of the options that can be assigned to an instructor.

The following steps describe how to create an instructor record and select instructor options.

1. Choose "Group operations" from PLATO Facilities.
2. Choose "Roster operations".
3. Choose "Add someone to the roster".
4. Type the number in front of the kind of record you want to create.
5. Type the name of the person you want to add to the group and press NEXT.
6. Press DATA to see the new record.
7. Choose "Allowable instructor options" and do one of the following steps.
 - a. Press DATA to give the new instructor the same options you have.
 - OT b. Type the letter in front of an option category you want to set. Then type the letters in front of the individual options you want to turn on. Press BACK. Repeat this step for each individual option category.
 - c. Press HELP for more information and a complete set of instructions.
8. Press SHIFT-BACK to return to group operations.

Managing Personal Notes

You can see statistics describing personal notes used by members of your group. You can turn individual users' notes options on or off, see the total number of personal notes each user has received, and set a maximum number of notes each user is allowed to receive. You can also delete notes addressed to a user after that person has been deleted from the group. The following steps describe how to manage the personal notes activities for your group.

1. Choose "Group operations" from PLATO Facilities.
2. Choose "Special options".
3. Choose "Manage personal notes activity".
4. Follow the display instructions.

USING NOTES

Notes are messages stored in PLATO files. They allow users to privately or publicly communicate with each other and allow messages to reach large numbers of users.

As an instructor, you can use a variety of notes features. You can write personal notes to or receive personal notes from other PLATO users; read or participate in general notes files and public notes files; and read announcements from PLATO personnel. (Refer to Notes in section 4 for information on the different kinds of notes and notes files and how to use them.)

Instructors can also use notes to communicate with students in their group. Many instructors use the student notes feature to do this. Student notes differ from other notes in that they are contained in a special notes file created by instructors for students in a specific group. Student notes are unique because they have a variety of functions. (Refer to Using Student Notes in section 4 for more information on student notes and to learn how to use them.)

USING INTERACTIVE COMMUNICATIONS*

As an instructor, you can communicate with students and other users by typing messages on your display. The person with whom you are communicating reads the message as you type it. You can use this feature to receive answers to questions or solutions to problems from PLATO consultants, to help students who have questions about their lessons, or to converse with another user about PLATO topics.

The following interactive communications features are available to instructors.

TERM-talk	Allows you to communicate with authors or instructors by typing messages on the display. (Refer to Using the Talk Feature in section 4.)
TERM-ask	Allows authors and instructors to help users (students and other authors and instructors) solve problems or to answer questions about their lesson materials being studied. (Refer to Using TERM-ask in section 4 to learn how to answer users' TERM-ask requests, and to TERM-ask in section 2 to learn how to ask a question using TERM-ask.)
TERM-consult	Allows authors and instructors to receive on-line help from PLATO consultants. Consultants and users communicate by typing messages on their display. (Refer to Consulting Help for Authors and Instructors in section 4 to learn how to use TERM-consult.)
TERM-pnote	Allows users to communicate privately with each other by writing notes.

REQUESTING PRINTS

As an instructor, you can request prints of any PLATO file that can be printed and for which you know the security code. (Refer to Requesting Prints in section 4 for more information on prints.)

RECEIVING HELP

At some time, almost all users have questions or need help while using PLATO services. There are two kinds of help available to instructors: help sequences and personal help. The kind of help you request depends upon the type and extent of help you need, as well as what you're doing when you request help. Many features and lessons contain help sequences, which provide additional information about a feature or lesson. These help sequences are written by the lesson author. Some examples of the kinds of information contained in these help sequences are: descriptions on how to use specific features, detailed information about a topic presented in a lesson, and information on how to proceed through the lesson. Programmed help is usually accessed by pressing HELP while using a lesson or feature.

Occasionally, you might have questions which require more help than you are able to receive from programmed help sequences. You can request personal help from other authors or instructors, or from PLATO consultants. Personal help allows you to communicate with another person and receive help while on-line.

* Refer to the inside back cover for an important regulatory notice concerning the use of communications features.

The following describes some of the PLATO features that instructors can use to receive help.

AIDS AIDS is a PLATO reference manual for authors and instructors. It contains definitions and explanations of most of the PLATO features and all of the PLATO Author Language and Micro PLATO Language commands. (Refer to Using AIDS earlier in this section for more information on AIDS and how to use this feature.)

TERM-consult Authors and instructors can receive help while using PLATO services by using TERM-consult. TERM-consult allows you to communicate with a PLATO consultant about questions or problems you have. Consultants are support personnel who are available to answer questions and solve problems for PLATO users. (Refer to Consulting Help for Authors and Instructors in section 4 for more information on TERM-consult and how to use this feature.)

TERM-ask TERM-ask is a PLATO feature that gives users (usually students and multiples) the opportunity to ask authors and instructors questions about PLATO materials while the materials are being presented to them. It also gives authors and instructors the opportunity to discuss questions or problems with other authors and instructors. (Refer to Using TERM-ask in section 4 to learn how authors and instructors use TERM-ask to give help to other users and to TERM-ask in section 2 to learn how to use the feature to receive help from other authors and instructors.)

TERM-talk TERM-talk allows you to communicate with another user who is currently using PLATO services by typing messages back and forth on the bottom two lines of your displays. (Refer to Using the Talk Feature in section 4 for more information.)

GIVING HELP

Part of your responsibility as an instructor is to provide assistance to the students in your group when they need it. TERM-ask allows you to do this. It allows students in your group to request help from you (or other authors or instructors in your absence) about questions or problems they have while using PLATO lessons. You and your students can communicate by typing messages on the display. It also lets you monitor (see) the display of the student requesting help.

Before your students can use the TERM-ask feature, there are some initial administrative tasks which you need to complete. (Refer to Using TERM-ask in section 4 for complete information on TERM-ask and how to use it.)

USING MICROCOMPUTER COURSES

As an instructor, you will want to familiarize yourself with the instructional management options available to microcomputer users. All instructors are encouraged to read *Instructional Management Tools*, the *PLATO Router*, and *Using the PLATO Router*.

Instructional Management Tools

Instructional management refers to curriculum design, individualization, and record keeping. Two instructional management tools are available for Control Data 110 courses: the PLATO router ("mprouter") and custom routers.

A router on a flexible disk is the first lesson a student will see after the disk is inserted in the drive. It is also the first lesson an instructor sees. Instructors can use disk routers to roster students, track their progress, and direct individual students' activities. Routers restrict disk access to registered students, present lessons following instructor directions, and store progress information. Therefore, the same router looks different to instructors and students. Student views of the PLATO router are presented in *PLATO Courses* in section 2. Instructor views are presented in this section.

Some disks use a router intentionally designed without instructional management tools. These can be self-help courses or games for which scores and progress summaries are not appropriate, courses for which standardized paper-and-pencil certification tests are required, or demonstration or orientation materials which do not require instructor direction or student records.

Any author can write a router to deliver courses on a flexible disk. Because such routers are all unique, they cannot be described in this guide. For information on custom routers, talk to the router's author. Information on writing a router for flexible disk course delivery is included in *Writing Routers* in section 4.

PLATO features include one router available to all authors writing disk courses, the PLATO router. Frequently used in published disk courses requiring student record keeping, its instructor options are defined and described in the following section.

THE PLATO ROUTER ("mprouter")

Most microcomputer users purchase PLATO courses already on flexible disks. Many decisions about lesson sequencing and student use are made as lessons are copied onto the disks. These include: whether or not students must identify themselves by typing a PLATO name, and whether or not records will be kept of their progress; when records are kept, the maximum number of students who can share a flexible disk; and the sequence of the lessons on the disk. Depending on the decisions made when each course is prepared, the instructor options described in the following sections may or may not be available in the disk courses you use.

Instructors interested in preparing their own courses for flexible disk delivery can do so. Instructions for flexible disk preparation are included in *Using the PLATO Router* in section 4. To prepare your own flexible disks, your Control Data 110 or Micro PLATO Station must be connected to a CYBER system offering PLATO services over a network. Flexible disk preparation is not available for Control Data microcomputers without network access.

The following section gives instructions on how to prepare a flexible disk using the PLATO router to register students. Refer to *Master Flexible Disk Drive* in section 1 for details about the handling of a flexible disk.

USING THE PLATO ROUTER

After inserting a course disk in the drive, you will see the welcome display pictured in figure 3-17.

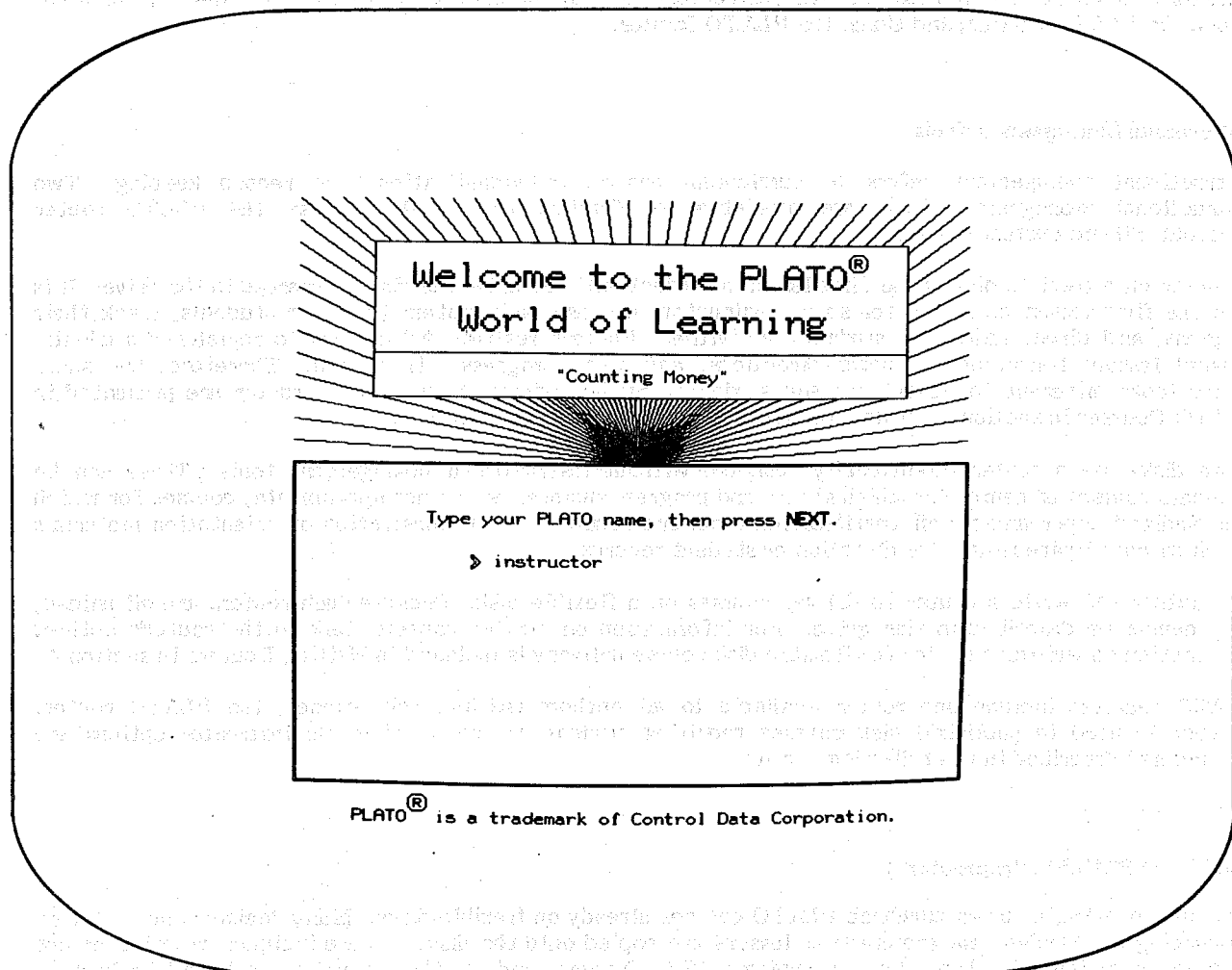


Figure 3-17. Welcome Display

1. To identify yourself as the instructor, type "instructor" at the arrow requesting your PLATO name, then press NEXT.
2. The first time you use a disk, you will be asked to choose a password. If you have used a disk before, skip to step 4 of these instructions. If you have not, continue with step 2.

A password of seven or more characters is recommended. Do not choose an obvious password like the name of your company, institution, or the car you drive. Your mother-in-law's middle name spelled backwards with her age appended would be a secure password. The name of your grocery store with the year you graduated from high school or college appended is another secure password. Try to use the same password for all disks in a given course to avoid confusion. If you write your password on a piece of paper, pair the password with the course name; store and guard the paper carefully.

Type your password at the arrow, then press NEXT. When you type your password, a random number of XXXs will appear on the display to assure no one can see the password you have chosen. You will be asked to type the same password a second time, to be sure you typed what you had originally intended, and to help you remember. Type the same password again, then press NEXT (refer to figure 3-18).

If the two passwords do not match, you will receive a message telling you they do not match, and asking you to repeat the double-entry procedure.

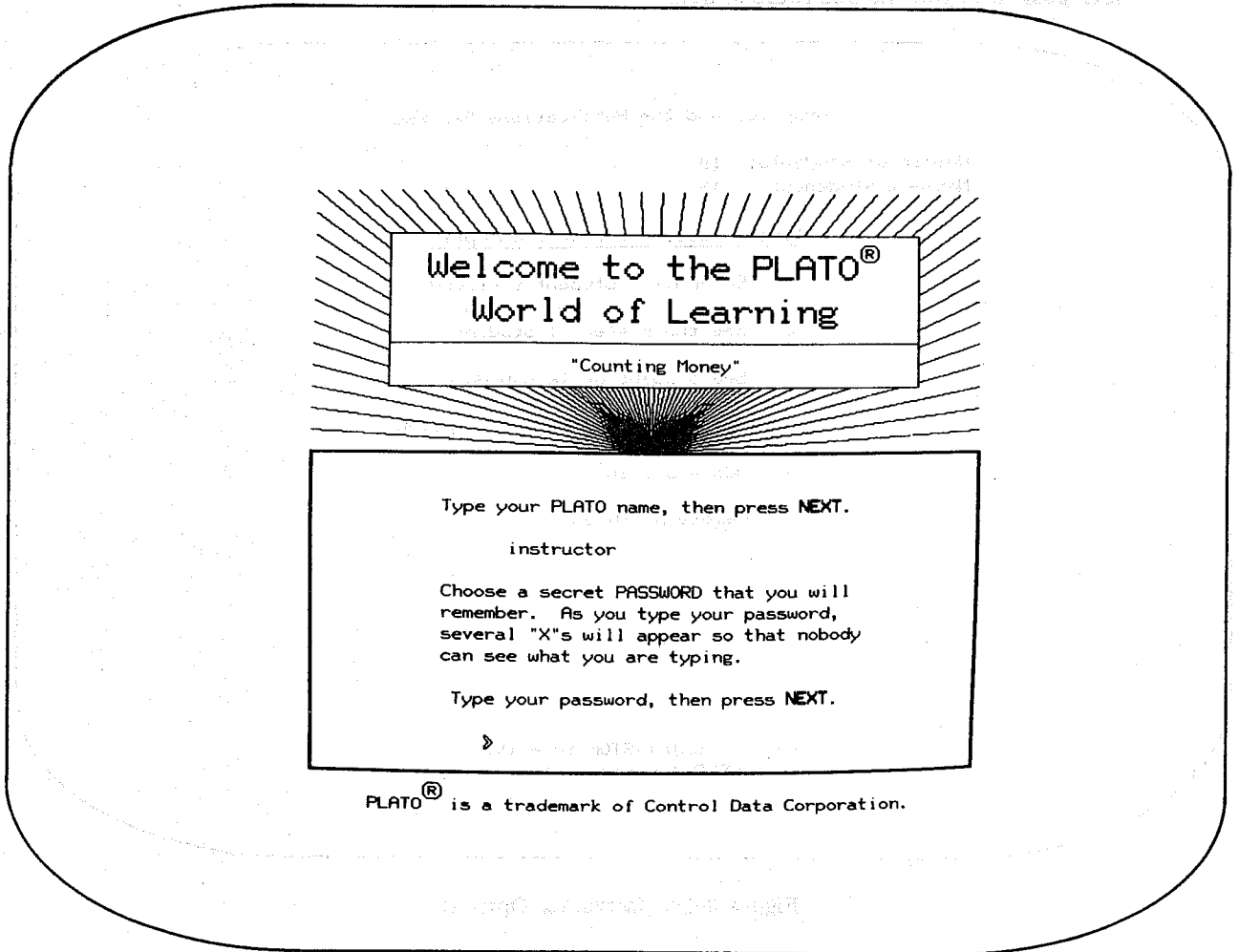


Figure 3-18. Password Choice

3. The first time you use a disk, after choosing your password, you will be taken to a display asking you to add a student. Until you identify at least one student on the disk, no other options will be available to you. Type the PLATO name one of your students will use, or choose a PLATO student name for yourself, then press NEXT. (Choosing a student name for yourself allows you to preview the lessons your students will use.)
4. After you have registered the first student on a disk, you will be taken to the set of instructor options shown in figure 3-19. Each time you insert the same disk, after typing "instructor" and your password, you will see these options.

"Graphics and the Publications Process"

Number of students: 10
Maximum students: 15

Type a letter to choose an option:

- a. See/Edit a student's record
- b. See the roster of students
- c. See student or lesson data summary
- d. Set router and security options
- e. Add a student
- f. Delete a student

Press SHIFT-STOP to exit;
HELP for more information.

Figure 3-19. Instructor Options

The following discussion describes each of the instructor options on flexible disks using the PLATO router to control student access and collect data on student performance.

USING PLATO ROUTER OPTIONS

The options described below are available to all instructors using courses organized by the PLATO router. Your index to all instructor options is pictured in figure 3-19. Pressing HELP while looking at this display will show you a description of each option. Pressing the letter in front of each option title will display a request for more information or bring you to a set of related options.

See or Edit a Student's Record

This option gives you access to all available information on individual students. After choosing this option, you will be asked to enter the name of the student record you would like to see. Type the student's name accurately at the arrow, then press NEXT.

The student record is pictured in figure 3-20. Looking at it you see basic information at the top of the display, and options to change this information or request additional information below.

The screenshot shows a terminal window with a title bar that reads "Graphics and the Publications Process". Below the title bar, the following information is displayed:

Student name: paul smith
Number of times signed on: 8
Password: NOT CHOSEN YET

Below this information is a list of four numbered options:

1. Change student's password
2. Change spelling of student's name
3. See student's lesson data
4. DELETE this student

At the bottom of the display, there is a prompt: "Press the BACK key for instructor options."

Figure 3-20. The Student Record

When you first use a disk, the student password will usually be set to: not chosen. Choosing "Change student's password" will allow you to set the password, change it, or indicate that no password is required. Follow the instructions on the display after you type the password. Remember to press NEXT after entering a new password.

While looking at the student record you can also change the spelling of a student's name by typing the letter in front of the option and following the display instructions. Remember to press NEXT after entering a student name.

To delete a student who has completed or dropped out of a course, type the letter in front of the option and follow the instructions. Before deleting students you will probably want to make a copy of the student record if you have a printer attached to your microcomputer. To make a copy of the display, turn on the printer and press the COPY key on your IST-III or Viking terminal.

Choosing to "See student's lesson data" brings you to the student progress report in figure 3-21. It lists all lessons on the disk and the student's status (started, not started, and complete) using symbols (see symbol key on the display), and the student's scores for completed lessons. While looking at this display, you can add some direction on individual lessons. By pressing EDIT and following the instructions, you can exempt some lessons (make them optional) and lock others (prevent student access), or change existing settings. Exempt and locked lessons are ignored when computing a disk completion for a student.

Pressing SHIFT-BACK returns you to the instructor options (refer to figure 3-19).

Page 1

"Graphics and the Publications Process"

Type a letter to enter a lesson. You may enter lessons marked with +. To see the prerequisites of an unmarked lesson, type the associated letter.

	<u>SCORE</u>
◆ a. Printing Processes	88
◆ b. Typesetting and Composition	96
◆ c. Working with Mechanicals	73
+ d. Color Printing	
◆ e. Inks and the Printing Process	69
+ f. Printing Papers	
g. Impositions and Signatures	
h. Folding and Binding	

SHIFT-BACK for instructor options; EDIT to set locks/exempts

○ = lessons you have started
◆ = lessons you have finished

HELP available

Figure 3-21. Student Progress Report

See the Roster

Selecting this option displays a list of all students currently enrolled on the disk (refer to figure 3-22).

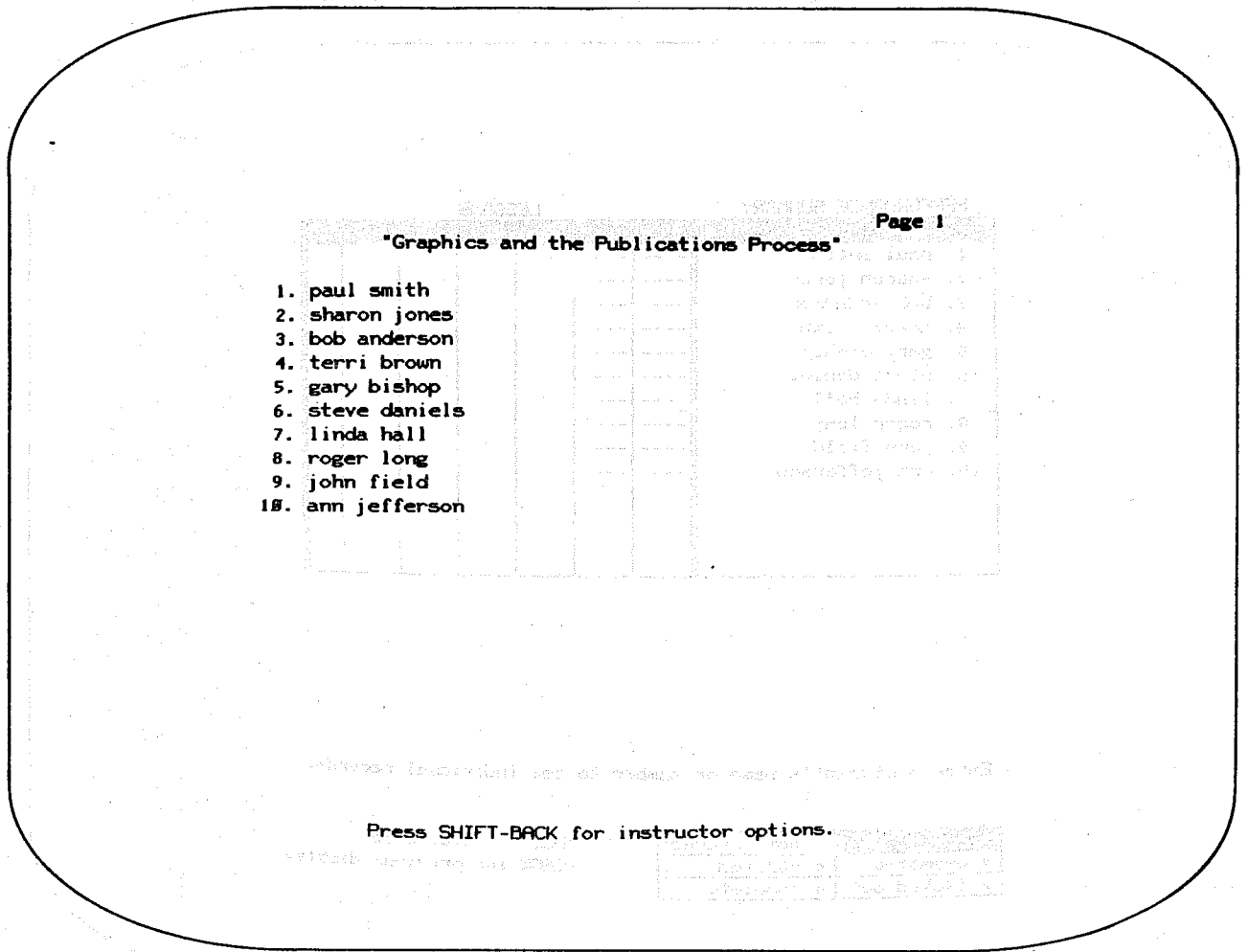


Figure 3-22. Disk Roster

See Student or Lesson Data Summary

When you select this option, you can choose between a summary of all students' status in all lessons on the disk (similar to figure 3-23) and a completion summary of all lessons on the disk (similar to figure 3-24).

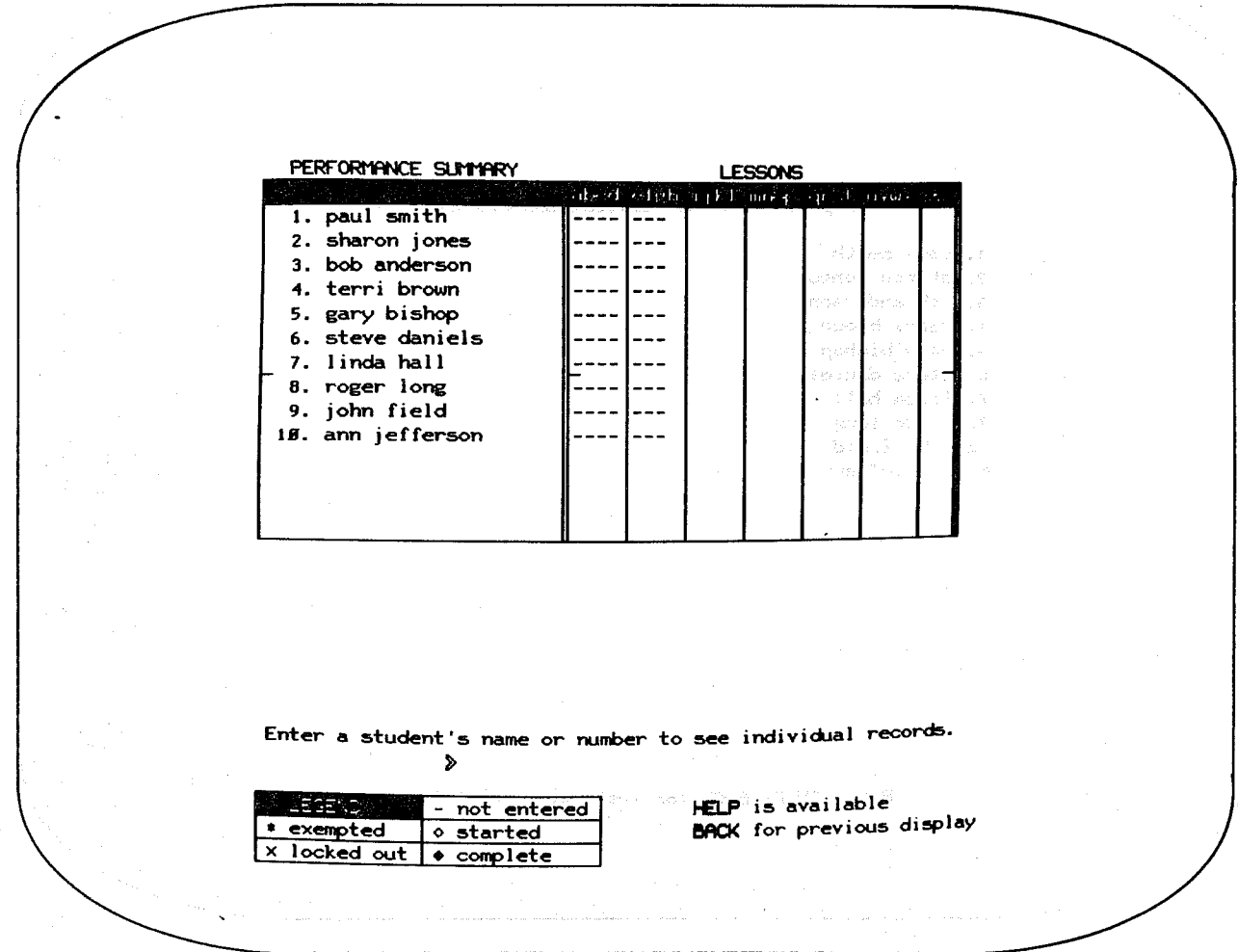


Figure 3-23. Performance Summary

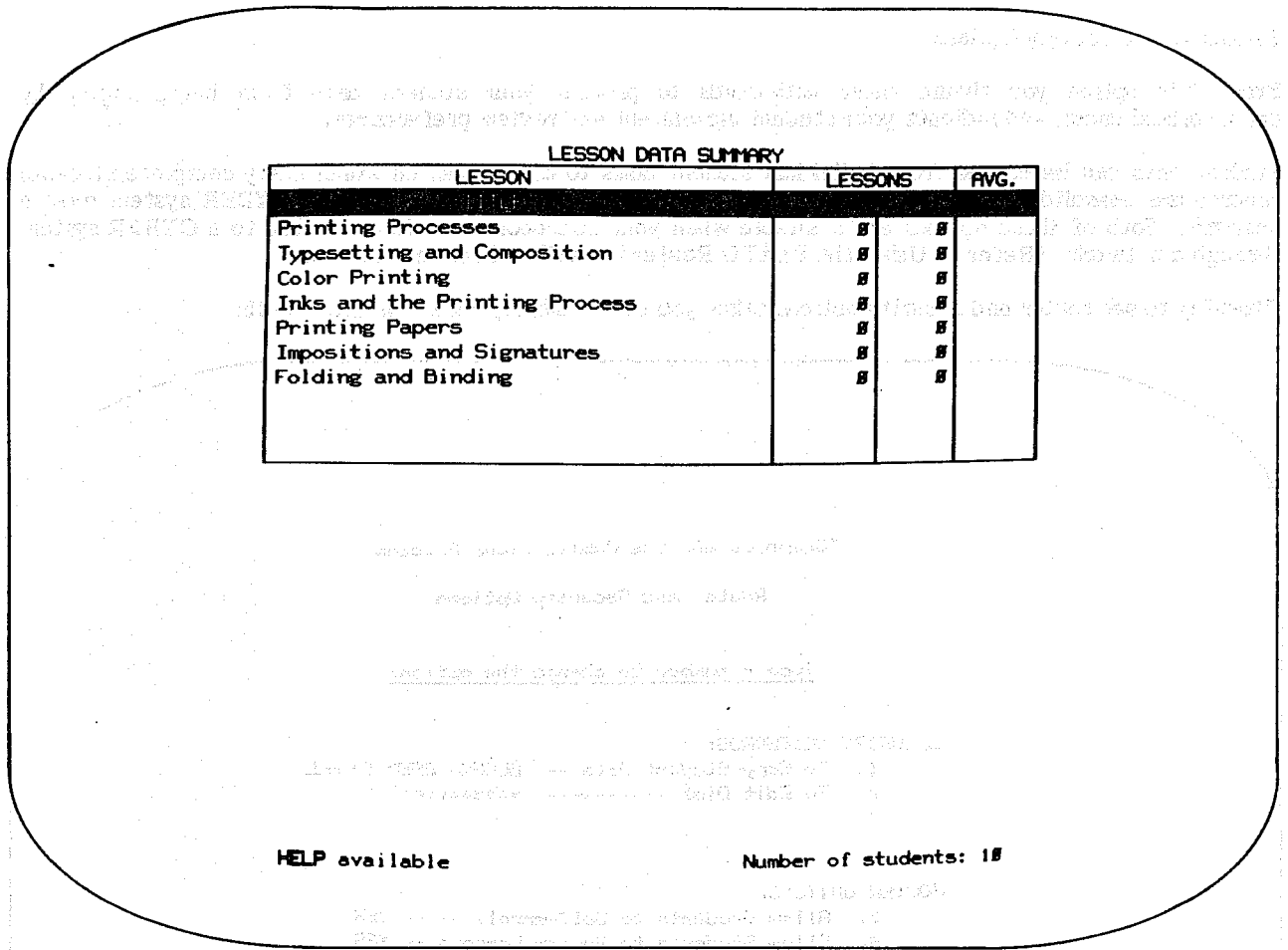


Figure 3-24. Lesson Summary

The student performance summary uses symbols defined in the lower left corner of the display. Typing a student's name will take you to the student's record (refer to figure 3-20).

The lesson data summarizes the number of students who have completed and begun all lessons on the disk, as well as listing the average number of tries required to master each lesson (average score).

Set Router and Security Options

From this option you should enter codewords to protect your student data from being copied by unauthorized users, and indicate your student enrollment and review preferences.

Student data can be copied from individual student disks to other disks on which many complete students records are consolidated. Student records can also be transferred to a file on a CYBER system over a network. Both of these options are available when your microcomputer is connected to a CYBER system through a network. (Refer to Using the PLATO Router in section 4 for instructions.)

Choosing to set router and security options takes you to the display shown in figure 3-25.

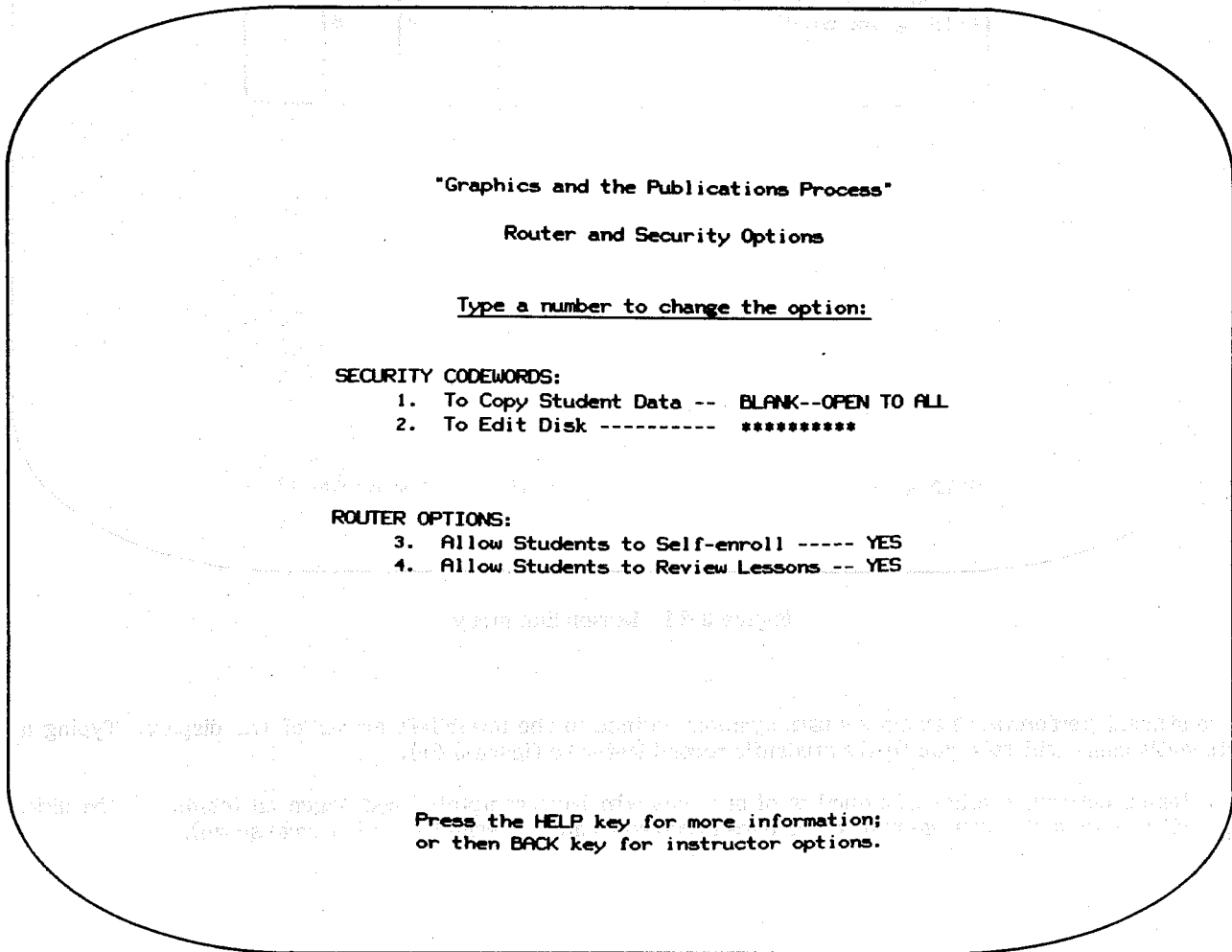


Figure 3-25. Router and Security Options

Be sure to select memorable, but unpredictable security codewords and enter them here. You are responsible for the security of your students' records. Type the number in front of an option to enter a codeword. Type your chosen security code and press NEXT. You will be asked to type each codeword twice to verify it. You may change a codeword at any time by selecting the option again.

Router options give you two administrative controls: student self-enrollment and lesson review. You may not have time to roster all students yourself. If in your judgement, students are mature enough to select recognizable names for themselves, you may choose to let students enroll themselves. This option is available to you after one student has been registered on the disk. Your other option is to allow or disallow student review of completed lessons. Student maturity and available time are best evaluated by you. To change an option, simply type its number.

Add a Student

This option allows you to add a new student to the roster, creating a student record. Enter the student name at the arrow then press NEXT. Follow the display instructions.

Delete a Student

This option allows you to remove (delete) currently enrolled students from the instructor options display. Although a student can be deleted from within his or her own record (refer to figure 3-20), it is more convenient to delete a set of students from the instructor options (refer to figure 3-19). To delete a student, type the number in front of the option and follow the display instructions.

Remember, it might be wise to make copies of student records before they are deleted. You can make copies of displays if a printer is attached to your microcomputer. To make a copy of the display, turn on the printer and press the COPY key on your IST-III or Viking terminal. Or, student data can be copied from individual student disk to other disks on which many complete student records are consolidated. Student records can also be transferred to a file on a CYBER system over a network. Both of these options are available when your microcomputer is connected to a CYBER system through a network. (Refer to Using the PLATO Router in section 4 for instructions.)

SECTION 4

USING AUTHOR FEATURES

USING AUTHOR FEATURES

Introduction	4-1	Usage Statistics and Flag Settings	4-55
Author Records	4-2	Using Time-Saving Features	4-55
The Author Mode Display	4-4	TERM-spell	4-56
AIDS	4-6	Using Documentation Features	4-56
Catalog of Published Courseware	4-6	Using Documentor	4-56
Notes	4-6	Graphics Utility for Inter-	
Personal Notes	4-6	active Documentation	
User List	4-6	Ease (GUIDE)	4-58
Prints	4-6	Requesting Prints	4-59
Understanding File Structure and Use	4-7	Writing PLATO Lessons	4-62
Getting Help	4-12	Using the Lesson File	4-62
Using AIDS	4-12	Registering Author and Lesson	
Consulting Help for Authors and		Information	4-63
Instructors	4-17	Assigning Security Codewords	4-65
Using TERM-ask	4-18	Editing Lesson Files	4-68
Preparing the Group to Use		Creating a Block	4-68
TERM-ask	4-19	Using the PLATO Editor	4-70
Using TERM-ask to Request Help	4-21	Requesting Editing Help	4-76
Responding to TERM-ask Requests	4-21	Quick Reference AIDS	4-77
TERM-talk	4-21	Condensing a Lesson	4-77
Using Communications Features	4-22	Creating Displays	4-79
Using the Talk Feature	4-22	Screen Locations	4-79
TERM-busy	4-23	Inserting and Showing Displays	
TERM-reject	4-24	(ID/SD)	4-82
TERM-confer	4-24	Creating Characters and Line	
Using the Teleconference Feature	4-24	Drawings	4-83
Starting a Teleconference	4-24	AIDS Listing of Display	
Joining a Teleconference	4-25	Commands	4-99
Commenting on Lessons and Features	4-25	Suggested Guidelines for Writing	
Notes	4-26	PLATO Lessons	4-100
Types of Notes Files	4-26	Understanding Extended Memory	
Notes File Access	4-26	Usage and Charges	4-101
Using General Notes	4-26	Referencing PLATO Author Language	
Using the Notes Files Sequencer	4-32	Commands	4-103
Using Personal Notes	4-35	Using Other Block Types	4-104
Using Lesson Notes	4-36	Common Block	4-104
Using Student Notes	4-38	Micro Block	4-105
Using Intersystem Notes	4-38	Leslist Block	4-106
Writing Notes	4-38	Vocabulary Block	4-106
Using Notes Features	4-44	Listing Block	4-106
Using Reference Tools	4-46	Text Block	4-106
AIDS	4-46	Copy-a-Block	4-107
Using the Catalog of Published		Custom Access List (Access	
Courseware	4-46	List Blocks)	4-107
Title Index	4-48	Using Advanced Editing Directives	4-114
Author Index	4-51	Using Block Listing Options	4-115
Subject Index	4-51	Documenting Lesson Changes	4-115
File Name Index	4-51	Writing Routers	4-116
Using the PLATO Author List	4-52	Preparing Lessons for Publication	4-116
Using the PLATO User List	4-54	Filescan	4-117
		Leslist Options	4-117

File Conversions	4-117	Using the PLATO Router ("mprouter")	4-127
Changing Micro PLATO Levels	4-117	Disk Preparation	4-127
Using Data Collection Files	4-118	Author Options	4-129
Dataset Files	4-118	Editing the Lesson Catalog	4-129
Nameset Files	4-118	Preparing Private and Public Disks	4-130
Code Files	4-118	Lesson Sequencing	4-130
Using Advanced Author Options	4-119	Copying Student Data	4-131
TERM-pnote	4-119	The PLATOSCRIBE Router	4-131
Setting an Alarm	4-119	Using Your Own Router	4-132
Using an Automatic Sign-on	4-119	Using Disk Duplication Services	4-133
Using Author TERMS	4-120	Using Micro PLATO Language	
TERM-cursor	4-120	Lessons on a CYBER System	4-133
TERM-grid	4-120	Using the Micro PLATO Language	4-134
TERM-step	4-120	Micro PLATO Language Levels	4-134
TERM-charset	4-121	Level Compatibility	4-135
Additional Security Options	4-122	Choosing Capabilities	4-135
Additional Options	4-123	File Security Using the Micro PLATO Language	4-135
Preparing Lessons for Microcomputer Users	4-125		
Routers Available for Flexible Disks	4-126		

This section presents an overview of the PLATO author capabilities.

You are encouraged to read the Introduction (section 1) before reading this section. In addition, new authors should also read sections 2 (Using Student Features) and 3 (Using Instructor Features), and practice using PLATO services as a student and as an instructor before reading this section. (Some features described in this section are also available to instructors. The features which are available to both contain instructions for both.)

INTRODUCTION

A PLATO author typically writes lessons for students to study. However, not all authors write lessons. Some users have author sign-ons because they need the wide range of features and options available to authors.

Authors interact with PLATO services on two levels. Since most authors write lessons, PLATO features are designed to allow authors not only to write and edit lessons, but also to use the lessons as students do.

Authors have a large number of features to support their work. These include reference information about capabilities, on-line help from other users or PLATO consultants, and a set of communications capabilities.

A good way for new authors to learn about and practice using the PLATO author features is to use the reference tools. Refer to Getting Help and Using Reference Tools later in this section.

AUTHOR RECORDS

PLATO features include a user record for each author. An author's record contains a complete list of all available options. From this list, specific options are selected for individual authors. These options control what features each author can use. As an author, your options are determined by the person who registers you. A list of some categories of the available author options is shown in figure 4-1. Choosing any category will list specific options which you may make available or unavailable to each author you register.

Press DATA if you want this person to have
the same options you have.

or enter the letter of the type of individual
options you want to set:

a. Primary Instructor Options

b. File Editing & Printing

c. Roster Options

d. General Record Editing Options

e. Student Record Editing Options

f. Active User Options

g. Messages and Notes

h. Data Collection Options

i. "mrouter" options

j. PLM options

Figure 4-1. Author Option Categories
When registering PLATO authors, you will be shown these categories of available options.

Some authors are responsible for registering other users and assigning allowable author options. The following steps describe how to create an author record and assign author options. (For an overview of PLATO groups, refer to Group Operations in section 3.)

1. From the Author Mode display, type the name of the group in which you want to register the author and press NEXT. You will see a set of group options (refer to figure 3-7).
2. Choose "Roster operations" by typing the number in front of the option.
3. Choose to "Add someone to the roster".
4. Type the number in front of the kind of record (author) you want to create.
5. Type the name of the person you want to add to the group and press NEXT.
6. Press DATA to see the new user record.
7. Choose "Allowable author options" and do one of the following steps.
 - a. Press DATA to give the new author the same options you have in your author record. You can only assign options assigned to you in your own user record. The options you are allowed to set are marked yes and no (not capitalized). Options you are not allowed to set or change are marked "YES" and "NO" (capitalized).
 - b. Choose a category of options to assign. Type the letter(s) in front of the specific option you want to assign. "Yes" indicates the option is on or allowed, and "no" indicates the option is off or not allowed. Press NEXT to move through all categories of options.
8. Press SHIFT-BACK to return to the options index.

THE AUTHOR MODE DISPLAY

As an author, the first display you see after signing-on is the Author Mode display (figure 4-2). This display is your navigational tool; all the PLATO features you need can be reached from this display. Unlike the PLATO Facilities display used by instructors, the Author Mode display does not provide any options. Although this might be confusing for new users, it allows more experienced authors to directly access the lesson or file they want to see without going through several indices.

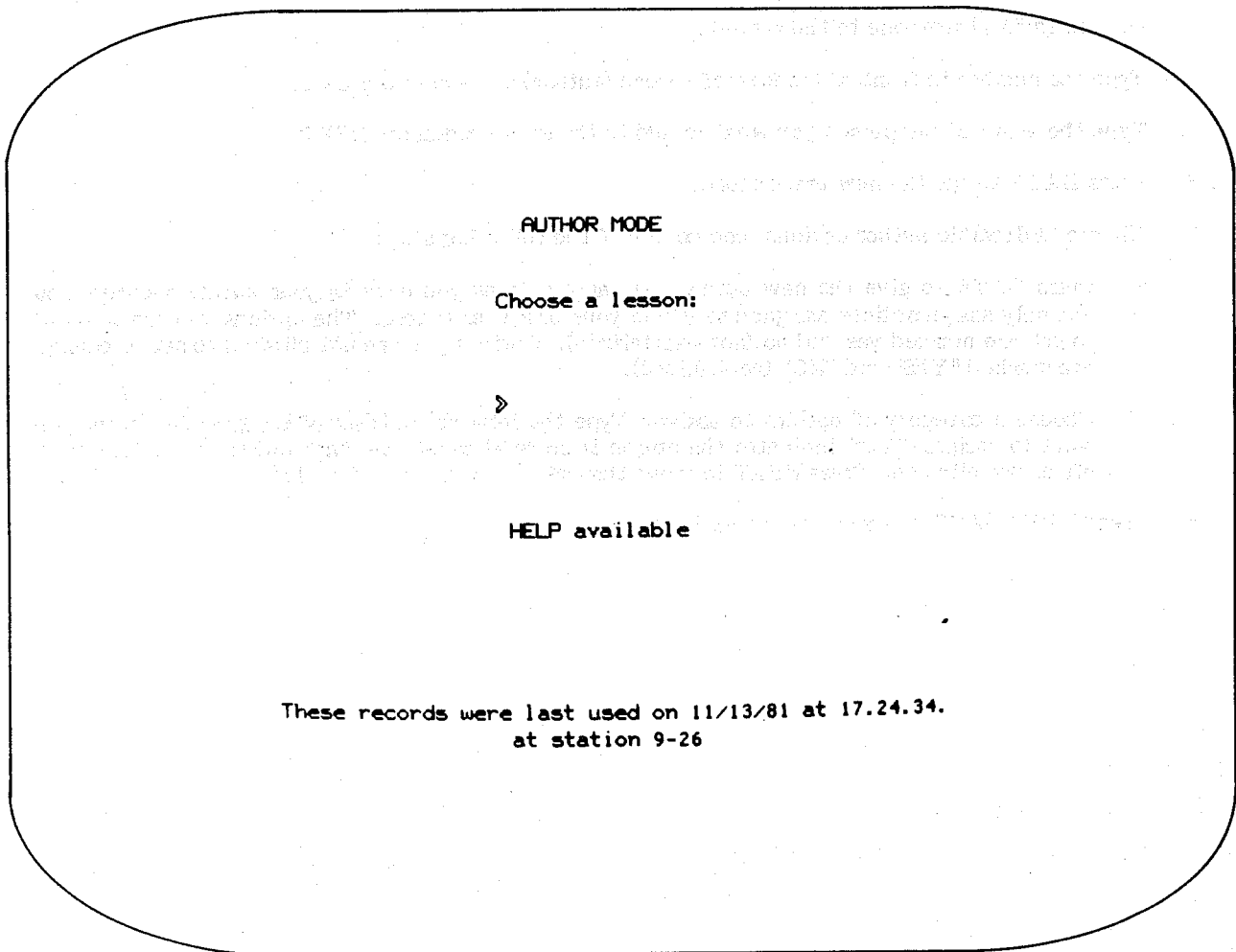


Figure 4-2. Author Mode Display
All PLATO features available to authors are reached from this display.

From the Author Mode display you can reach a list of options frequently used by authors (figure 4-3) by pressing SHIFT-DATA. This display gives directions on how to reach the options. You can reach all the options listed on this display by typing the shifted letter of the option on the Author Mode display. For example, to go to AIDS, press SHIFT and type "A" from the Author Mode display.

--- O P T I O N S ---

A	aids
B	bulletin board
C	charset
D	desk calculator
E	ECS usage
F	catalog of lessons
I	info on records/talk flags
J	j-stack
L	lineset
M	micro
N	notes
P	personal notes
Q	questions (aids)
R	request prints
S	security code
T	time
U	user list
V	version
X	lesson X-search
Z	alarm service

Press **HELP** for more information

On the **AUTHOR MODE** display, press the **SHIFTed** letter to access the corresponding option immediately.

Figure 4-3. Frequently Used Author Options
This display lists options frequently used by authors and provides instructions on how to reach them.

NOTE

Not all users can reach all options on this display. Accessibility of some options is determined by the group in which the user is registered and the individual author options selected. Contact your account director to gain access to unavailable options.

The display pictured in figure 4-3 is a reference to remind you of what key to press to reach a specific feature. After a short time, you will learn which keys are associated with specific features.

The following paragraphs briefly describe some of the most frequently used options on this display (figure 4-3). The remaining options are described in Additional Options later in this section.

AIDS

AIDS is an on-line reference manual for authors and instructors that contains definitions and explanations of most of the PLATO features and all of the PLATO Author Language commands. To reach AIDS, press SHIFT and type "A" from the Author Mode display. (Refer to Using AIDS later in this section for more information.)

CATALOG OF PUBLISHED COURSEWARE

The Catalog of Published Courseware contains a list of all published PLATO courses. It is used as a tool for identifying and previewing courses and curricula. (Refer to Using the Catalog of Published Courseware later in this section for more information on the catalog and how to use it.)

NOTES

Notes are written messages users can send to each other. Authors can access different kinds of notes, depending upon the notes options selected for their use and the access they are given to individual notes files. To learn about an important set of notes you should read regularly, study the PLATO Communications index. To reach this notes index, press SHIFT and type "N" on the Author Mode display. (Refer to Notes later in this section for more information on notes and how to use them.)

PERSONAL NOTES

Personal Notes are private messages between two PLATO users. They allow users to communicate on an individual and personal basis. To reach Personal Notes, press SHIFT and type "P" from the Author Mode display. (Refer to Using Personal Notes later in this section for more information on Personal Notes and how to use them.)

USER LIST

The PLATO user list displays the names of all authors and instructors who are currently using PLATO services and who have voluntarily included their names in the list. To reach the PLATO user list, press SHIFT and type "U" on the Author Mode display. (Refer to Using the PLATO User List later in this section for more information on the user list and how to use it.)

PRINTS

The print feature allows you to request prints of files from the PLATO service center, or to print a file or make copies of displays using a printer attached to a terminal. To request prints from the service center, your account must contract to use the print feature. No contractual agreements are necessary to use a printer attached to your terminal. If your account is on a Control Data services system, see your account director to verify 1) the availability of prints from the PLATO service center for your account and 2) your authorization to request prints in the account access list. The print feature also allows you to check the status of a print request previously made and the status of the printer. To reach the print feature, press SHIFT and type "R" on the Author Mode display. (Refer to Requesting Prints later in this section for more information on prints and how to request them.)

UNDERSTANDING FILE STRUCTURE AND USE

Large amounts of PLATO information can be stored for all users. Because there is so much information, it must be organized in a way that it can be easily retrieved and used. All PLATO information is contained in files. A file is simply a delegated amount of space in the computer's memory in which information can be stored. An easy way to understand files is to think of a huge filing cabinet. Each drawer in the cabinet can be compared to a file. Each drawer (file) has a certain amount of space in which information can be stored or from which it can be retrieved and each file has named subsections to break information into identifiable pieces.

Students use files when they study lessons. The lessons they study are files containing code which directs the lesson. Instructors use files called groups to register students in curricula and to keep records of students' progress. Authors use files to write lessons as well as to collect data and communicate with other users.

There are several types of PLATO files. Different types of files are used to store different kinds of information. The type of files you use is determined by the kind of information you want to store and the kinds of things you want to do with the information.

Although file types differ in the kinds of information they store, most files are structured similarly. The length of the file (the number of parts) is assigned by the account director when the file is created. (There is, however, a maximum number of parts that can be assigned for each type of file.) Each file is assigned a certain number of parts. The number of parts in a file determines the amount of data it can hold. The amount of data in each part of a file is usually 320 computer words. A computer word consists of a string of 10 characters. A character can be any typed letter, number, or symbol. Spaces between letters and numbers count as characters, but blank spaces at the end of a line do not. Capital letters count as two characters (a shift code plus one character).

Each type of file differs slightly based on its functions, but all have similar structures. Most files have an index which allows you to organize information in a logical manner, as well as easily locate information and move around in the file. The structures of the indices differ slightly for each type of file. Some files are indexed by blocks (as in lesson files; figure 4-4a shows the block listing display), while others are divided into numbered sections (as in Documentor files, figure 4-4b). Whatever the structure, directions are always provided to help you understand and effectively use the indices.

Each type of file has a directory which contains information about the author of the file; briefly describes its contents; and contains basic information about the file, its security codewords, and associated files. Some of this information (options a-e) is entered by the author when the file is used for the first time. Some of this information (historical data) is automatically maintained. This directory display is reached by pressing DATA from the main index of most file types. Some examples of directory displays are in figure 4-5.

Table 5-1 (refer to section 5) lists the different types of PLATO files, their primary functions, and maximum allowable sizes.

LESSON--english HELP available

PART 1 OF 2

BLOCK NAME

- a *directory
- b sentence s
- c grammar
- d poetry
- e diagram
- f raven
- g access

Figure 4-4a. Example of a Lesson Index

Document intro INSPECT ONLY

-
- 1 Preface/Introduction
 - 3 Creating a Document/Accounts
 - 4 Major Section/Subsection Indexes
 - 5 Editing Document Text
 - 6 Document Directory
 - 7 Reading a Document
 - 8 Printing a Document
 - 9 Interfacing with Other Lessons
 - 10 Glossary of Terms
 - 11 Documentor Quick Reference Guide
 - 88 Version 1 of Documentor

**** END OF DOCUMENT ****

What command >
HELP available

Figure 4-4b. Example of a Documentor Index

Lesson name ---- english Disk pack --- eagmast
Starting date -- 11/13/81 Account ---- mktgrps
Last edited ---- 11/13/81 17.21.36
by ---- jean price of field at 9-26
Last action ---- Change block contents
 (source block "acc. code" [2-b])

Type the appropriate letter: >

- a. Author information
- b. Associated files
- c. Codewords
- d. Editing specifications
- e. Micro PLATO level

HELP available

Figure 4-5a. Example of a Lesson Directory

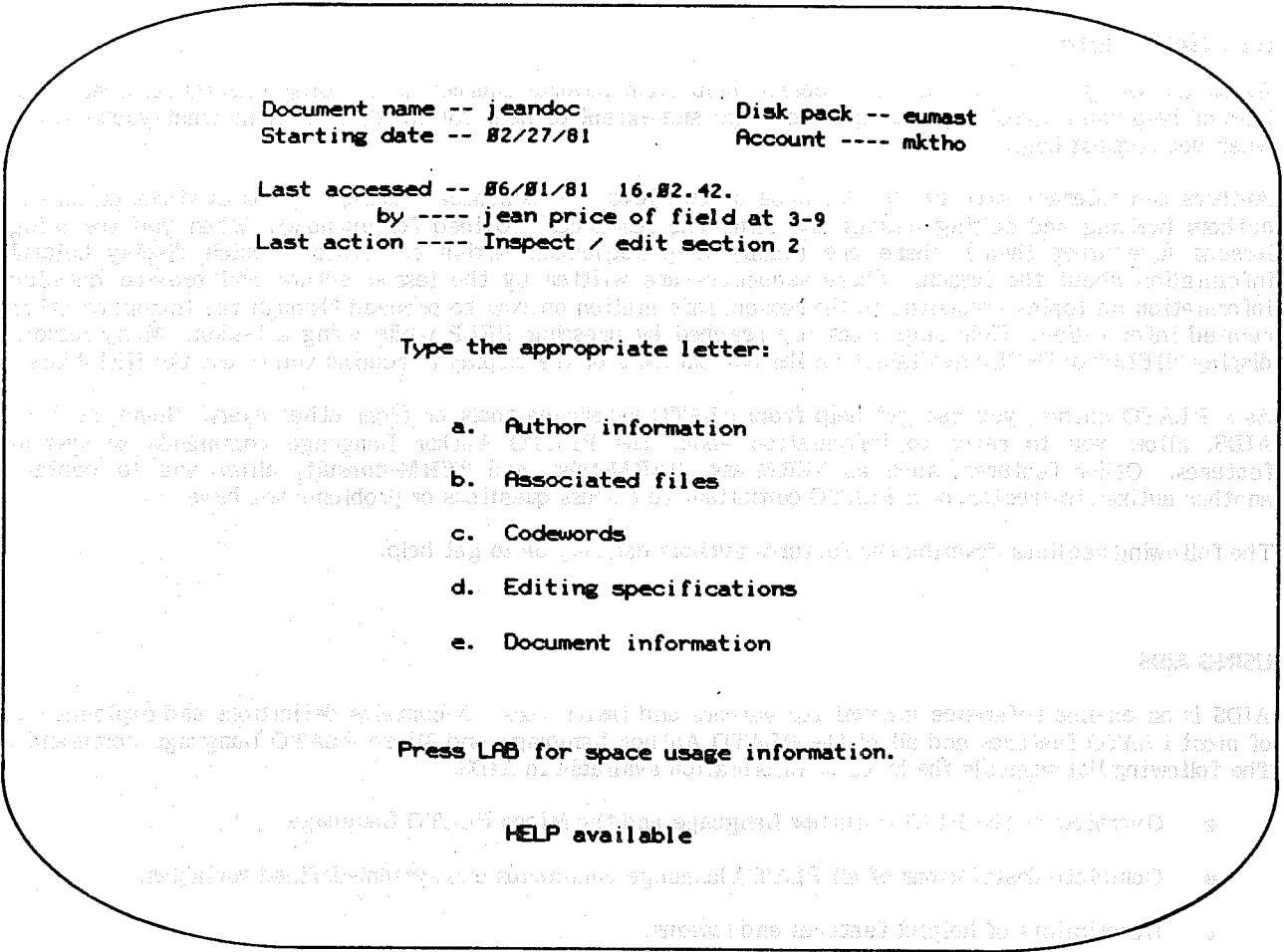


Figure 4-5b. Example of a Documentor Directory

GETTING HELP

As an author, you can request and receive help from several sources while using PLATO services. The kind of help you request depends upon the type and extent of help you need, as well as what you're doing when you request help.

Authors can interact with PLATO services on two levels — as students (using lessons as students) and as authors (writing and editing lessons and using the resources provided for authors). When you are using lessons (executing them), there are usually help sequences within the lessons which display helpful information about the lesson. These sequences are written by the lesson author and provide detailed information on topics presented in the lesson, information on how to proceed through the lesson, or other related information. Help sequences are reached by pressing HELP while using a lesson. Many lessons display "HELP" or "HELP available" on the bottom lines of the display to remind you to use the HELP key.

As a PLATO author, you can get help from PLATO reference tools or from other users. Some, such as AIDS, allow you to refer to information about the PLATO Author Language commands or system features. Other features, such as TERM-ask, TERM-talk, and TERM-consult, allow you to contact another author, instructor, or a PLATO consultant to discuss questions or problems you have.

The following sections describe the features authors can rely on to get help.

USING AIDS

AIDS is an on-line reference manual for authors and instructors. It contains definitions and explanations of most PLATO features and all of the PLATO Author Language and Micro PLATO Language commands. The following list suggests the kinds of information available in AIDS.

- Overview of the PLATO Author Language and the Micro PLATO Language.
- Complete descriptions of all PLATO language commands and system-defined variables.
- Descriptions of helpful features and lessons.
- Definitions of PLATO terminology.
- Libraries of useful PLATO Author Language and Micro PLATO Language routines and character sets.
- Lists of commands (alphabetically and by function).
- Lists of indices in AIDS.

Authors and instructors reach AIDS differently. As an author, you can reach AIDS from either the Author Mode or the block listing display (refer to figure 4-4a if you are editing a lesson). From the Author Mode, you can either press SHIFT and type "A", or type "AIDS" and press NEXT. You will see the AIDS title display (figure 4-6). From the block listing display, press SHIFT and type "Q" and then press NEXT. As an instructor, you can access AIDS from the PLATO Facilities display. Choose the AIDS option by typing the letter in front of it. You will see the AIDS title display (figure 4-6).

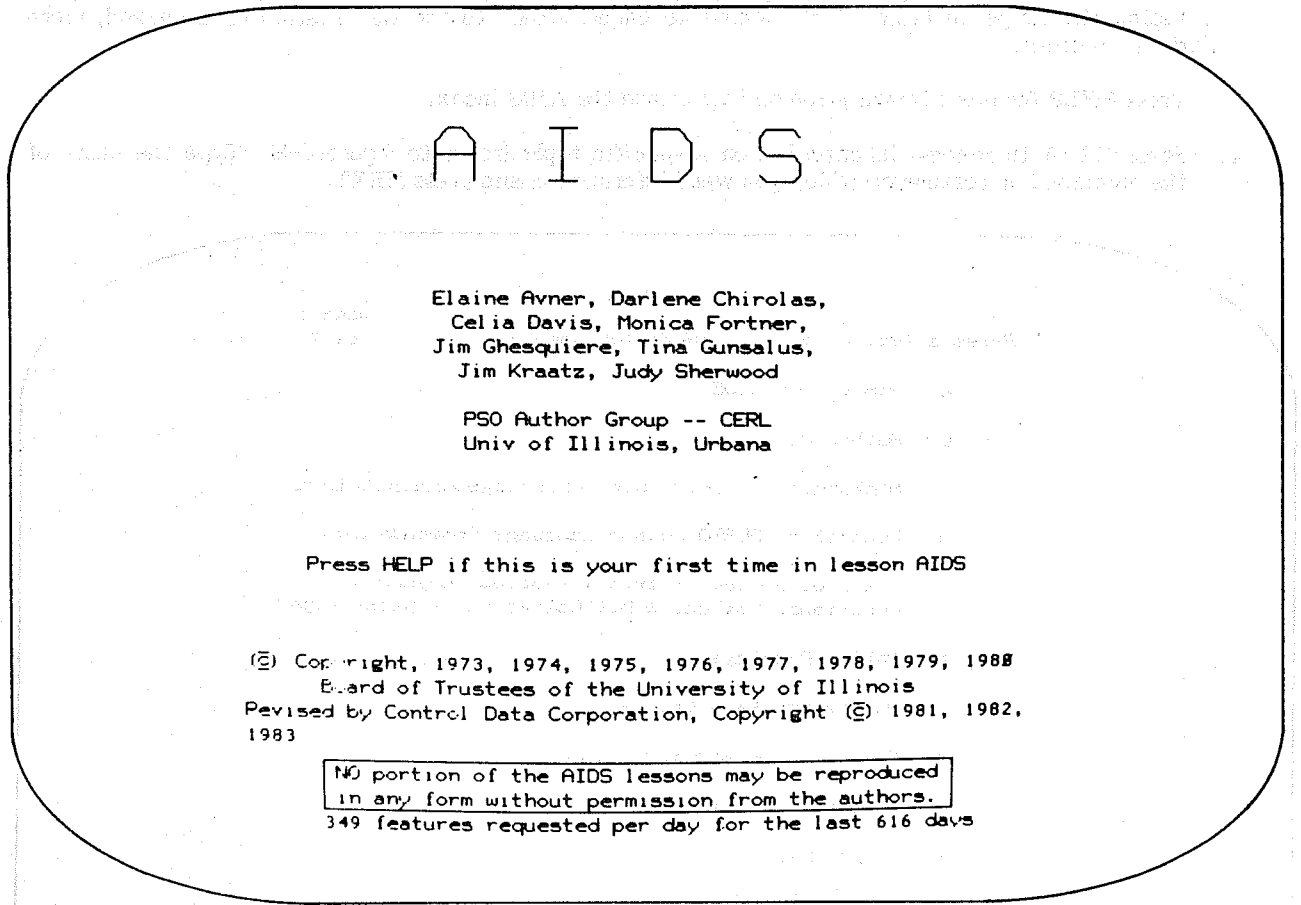


Figure 4-6. AIDS Title Display

From the AIDS title display, you can do one of three things depending upon your needs.

- Press HELP for more information on AIDS and how to use it.
- Press NEXT for the AIDS index (refer to figure 4-7). The AIDS index consists of two displays (press NEXT for the second display, BACK to return to the first) that are like a table of contents. Choose an option that generally covers the type of information you want to see by typing the letter in front of it. You'll be taken either to the information or a second, more detailed index.

Press HELP for more information on how to use the AIDS index.

- Press DATA to request information on a specific topic (refer to figure 4-8). Type the name of the command or feature on which you want information and press NEXT.

Press a letter; or press NEXT for page 2 page 1
of 2

- a How to use AIDS
- b Author Resources
- c Alphabetical PLATO Author Language Commands List
- d Functional PLATO Author Language Commands List
- e Lists of System Defined Variables, Keynames, Functions, Logical & Bit Operators, -specs- Tags
- f Making Displays
- g Making Graphs & Charts
- h Calculations and Variables
- i Conditional Operations
- j Sequencing
- k Judging
- l Execution of TUTOR

Revised by Control Data Corporation, © 1983

SHIFT-BACK always returns you to an index display.
HELP, DATA, BACK, SHIFT-NEXT are always available.

Figure 4-7a. AIDS Index

Press a letter; or press NEXT for page 1

page 2
of 2

- m The CDC Computer
- n Special Characters: ACCESS Characters, Linesets, FONT Characters (Character Sets), & MICRO Keys
- o Student Data, Instructor Options, & Routers
- p Keynames, Keycodes, and Internal Codes
- q Programming Errors and Condense, Lesson, & Execution Errors
- r Library of Author Routines
- s Systematic Lesson Design
- t Informational System Terminal (IST)

SHIFT-BACK always returns you to an index display.
HELP, DATA, BACK, SHIFT-NEXT are always available.

Figure 4-7b. AIDS Index

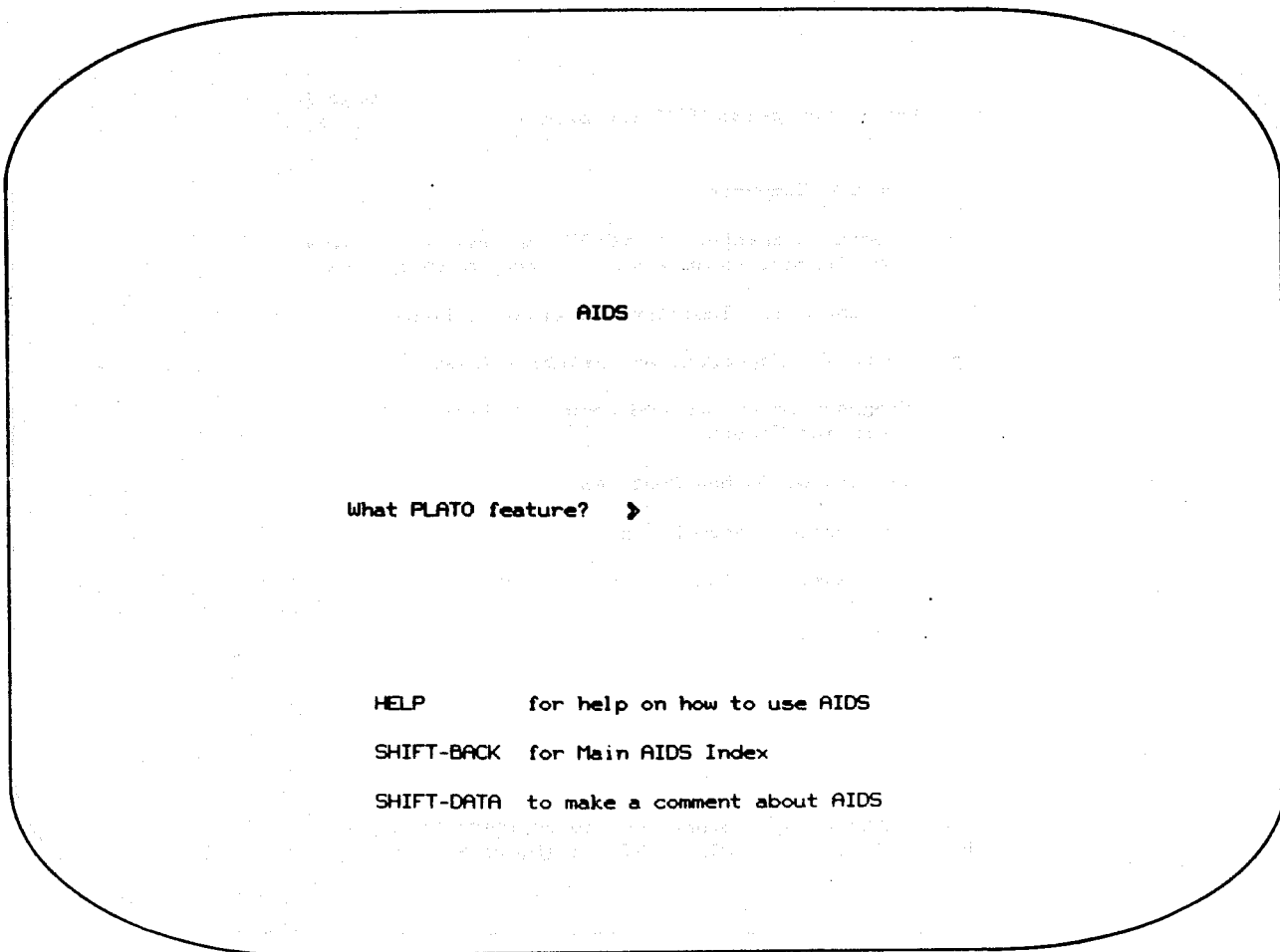


Figure 4-8. AIDS "What PLATO feature?" Option
This display allows you to request information on a specific command or feature on which you want information.

For a quick reference, you can press DATA from any display in AIDS, go to the display in figure 4-8, and request information.

Press HELP from the display in figure 4-8 for more information on using this display.

Refer to Quick Reference AIDS later in this section for information on how to reach AIDS while editing a lesson block.

CONSULTING HELP FOR AUTHORS AND INSTRUCTORS

Authors and instructors can request help by using TERM-consult. TERM-consult lets you communicate with a PLATO consultant about questions or problems you have while using PLATO services. Consultants are Service Center employees who are available to answer questions and solve problems for PLATO users.

The following paragraphs describe how to use TERM-consult.

To contact a consultant, do the following steps.

1. Press TERM (hold the SHIFT key down while pressing the TERM/ANS key).
2. At the bottom of your display you'll see the message, "what term?" and an arrow. At the arrow, type "consult" and press NEXT. You will see either a message that says a consultant has been notified of your request and will respond as soon as possible, or that no one is available at this time but your name has been placed on a waiting list.
3. When a consultant answers your call, you see a message at the bottom of the display indicating the name of the consultant and that the consultant sees your display (for example, "mary jones/pso sees this display").

NOTE

If you solve your problem before a consultant reaches you, you can cancel the request. To cancel a request, press TERM and type "consult" again. You will be asked if you want to reaffirm your request or cancel it. Press NEXT to repeat your request for help, or press SHIFT-HELP to cancel it.

To talk with the consultant, do the following.

1. When the consultant answers your call and a message similar to "mary jones/pso sees this display" appears, an arrow also appears at the bottom of the display. Any message your consultant types to you appears to the right of that arrow. You can communicate with the consultant by pressing TERM. When you press TERM, a second arrow appears on the display. This means you are in talk mode. Talk mode allows you to type and respond to messages on the display. As you type, your message appears to the right of the second arrow.
2. If your message requires more than one line of typing, press LAB to clear the line and continue typing. The LAB key is the only key that allows you to continue talking by typing. If you press any function key other than LAB, the arrow disappears. You can only communicate with the consultant when the second arrow is visible and you are in talk mode. If the arrow disappears, press TERM to recall it and resume typing.

Sometimes it is helpful for a consultant to see what is on your display to answer your question or solve your problem. Showing the consultant your display eliminates the need for you to describe in detail where you are and what is giving you problems.

To show the consultant your display, you must replot it. Replotting means to move from the display you are currently looking at to a new display. (You can return to your original display again if that is the display on which you need help.)

To show the consultant your display:

1. Tell the consultant you are replotting your display.
2. Press BACK to leave talk mode, then go to the first display you want the consultant to see.
3. Press TERM to get into talk mode again and ask your question or discuss the display.
4. To show the consultant a different display, press BACK to leave talk mode. Go to the new display and repeat step 3.

To end the consultation:

1. When your question has been answered and you do not need any further help, type "thanks" and the consultant ends your communication.
2. You'll see a message saying the consultation is over.

USING TERM-ask

TERM-ask is a PLATO feature that gives users (usually students and multiples) the opportunity to ask authors and instructors questions about instructional materials while the materials are being presented to them. It also gives authors and instructors the opportunity to discuss with other authors and instructors questions or problems they might have while using PLATO features. TERM-ask can be used as an instructional aid by instructors who want to discuss questions with students as they arise, or for courses requiring dialogue to reach objectives. It is particularly useful for students who are having difficulty with some concepts in their lessons. It is also useful within author groups in which more experienced authors would like to answer new authors' questions about procedures, policies, specific development projects, or programming in general.

TERM-ask is available to any user whose group is prepared to use the TERM-ask feature. The author or instructor responsible for the group determines whether to allow users in the group to use the feature, and also determines which authors and instructors in the group can respond to TERM-ask requests.

The following paragraphs describe how to prepare a group to use TERM-ask, how to request help from other authors and instructors, and how to respond to TERM-ask requests from other users.

Preparing the Group to Use TERM-ask

1. Do one of the following depending upon your user type.
 - a. From the Author Mode display, type the group name of the users who you want to use TERM-ask. Press NEXT. You may be asked to enter the security code. You will see a list of group operations (refer to figure 3-7).
 - b. From the PLATO Facilities display, choose "Group operations" by typing the letter in front of the option. Type the group name of the users who you want to use TERM-ask. Press NEXT. You may be asked to enter the security code. You will see a list of group operations (refer to figure 3-7).
2. Press DATA. You will see the Group directory.
3. Choose "Associated files" by typing the letter in front of the option.
4. Type the number below the "TERM-ask" option. You will see an arrow.
5. Type the group name of the users (authors and instructors) who you want to answer the TERM-ask requests, and press NEXT.

NOTE

You can only enter one group name and it must be a group for which you know the security change code.

After you prepare the student group to use TERM-ask, you need to designate which users are available to receive TERM-ask requests and answer student questions. Usually, this includes you and occasionally another author or instructor in your group who is familiar with your curriculum. The following steps describe how to enable your group to receive TERM-ask requests and answer student questions.

1. Do one of the following depending upon your user type.
 - a. From the Author Mode display, type the group name of the user(s) you want to receive student TERM-ask questions. Press NEXT. (Remember, you can only enter one group name. Be sure it is a group for which you know the change code.) You will see the group operations options.
 - b. From the PLATO Facilities display, choose "Group operations", by typing the letter in front of the option. Type the group name of the user(s) who you want to receive student questions. Press NEXT. (Remember, you can only enter one group name. Be sure it is a group for which you know the change code.) You will see the group operations options (refer to figure 3-7).
2. Choose the "See or change someone's record" option by typing the number in front of it.

NOTE

Before you can set another user's record to allow that user to receive TERM-ask requests, your user record must have the "Receive TERM-ask requests" option set to "yes". Ask your account owner to assign this option to you.

3. Type the PLATO name of a person in the group who you want to receive and answer TERM-ask questions. Press NEXT.
4. Select "Choose allowable instructor options."
5. Choose "Primary instructor options."
6. Locate the "Receive TERM-ask requests" option. Set the option to "yes" by typing the letter in front of it.
7. Repeat steps 2 through 6 from the group operations options to enable other authors and instructors in your group to answer TERM-ask requests.

NOTE

This process enables any author or instructor in a given group to receive TERM-ask requests. But, because some days are always more convenient than others, authors and instructors have the ability to temporarily turn off this capability. To control temporary availability to answer TERM-ask requests, refer to Usage Statistics and Flag Settings later in this section.

Sometimes you might not be signed on when someone requests help. You can help at a later time if you have a Student Notes file attached to the group being used by people who may request help. A Student Notes file records information on who requests help while you are not signed on. It collects unanswered questions and allows you to answer them later by writing a note. The following steps describe how to attach a Student Notes file.

1. Create a Student Notes file for your group through your account. Your account director can create a student notes file for you if you do not have file creation capabilities.
2. Go to the group operations display of the group that uses TERM-ask to ask questions. Press DATA. You will see the group directory.
3. Choose the "Associated files" option by typing the letter in front of it.
4. Type the number below the "Student notes" option. You will see an arrow.
5. Type the name of the Student Notes file.

Your preparation is complete. To be sure questions are answered, check this Student Notes file at least once a day. The notes file sequencer simplifies the task of monitoring one or more notes files daily. Refer to Using the Notes File Sequencer later in this section for more information.

Using TERM-ask to Request Help

To use TERM-ask to request and receive help from another author or instructor, follow the instructions given for students in section 2 of this manual under TERM-ask.

Responding to TERM-ask Requests for Help

When a student or another author or instructor uses TERM-ask, the request is shown to all authors or instructors currently signed on who have been designated to receive TERM-ask requests for that group. The request appears as a message on the bottom of the author's or instructor's display. The message indicates the name of the user requesting help; the group in which the user is registered; and the site number, station number, and system the person is using.

To respond to a user's TERM-ask request, authors should type "ask" on the Author Mode display and press DATA. Instructors should choose the "Interactive communications" option on the PLATO Facilities display by typing the letter in front of the option and then selecting the "Respond to TERM-ask requests" option. You will see the TERM-ask options. From this display, you can choose any of the following options. Type the number in front of the desired option.

- See which users in your group are signed on and are registered as consultants.
- See which users are currently signed on in any group for which your group is the consulting group. (This option allows you to see which users might request help.)
- Do any of the following:
 - See a list of pending requests for help from users in your group.
 - Send a message to any user who has requested help. (For example, this option could be used to say, "I'll be with you in a moment.")
 - Monitor the display of any user requesting help.
 - Delete a request for help, indicating to other consultants that this user's problem has been solved.

The list of users waiting for help is circular. Older requests are automatically overwritten, usually only after several hours have passed. Remember that users who request help using TERM-ask are given an option to write a note to the Student Notes file for their group when no one is available to help them.

TERM-talk

TERM-talk allows you to communicate with another author or instructor who is currently using PLATO services by typing messages back and forth on the bottom two lines of your displays.

To learn how to use TERM-talk, refer to Using the Talk Feature later in this section and PLATO lesson "Qtermtalk".

USING COMMUNICATIONS FEATURES*

PLATO communications features for authors and instructors include a range of options. You can privately communicate with another user by typing messages back and forth on your displays and see the messages as they are being typed, or you can write Personal Notes which can only be read by the person to whom the note is sent. You can publicly communicate with a group of users by writing General Notes to which the group can respond. PLATO personnel use this feature to communicate with all users. The communications features also allow you to write a note to the person who wrote or maintains a lesson while you are using the lesson.

The following paragraphs describe the PLATO communications features available to authors and instructors and how to use them.

USING THE TALK FEATURE

TERM-talk allows you to communicate with another author or instructor currently using PLATO services by typing messages on the bottom two lines of your display.

The following steps describe how to use the TERM-talk.

1. Initiate a TERM-talk in either of the following ways:
 - Press TERM (hold SHIFT down while pressing TERM/ANS) from any location.
 - Press DATA from the Total Users display (refer to Using the PLATO User List later in this section).
2. An arrow appears at the bottom of your display. Type the name and group of the user you wish to talk to and press NEXT. Be sure to use the format:

PLATO name/PLATO group

The slash between the name and group is essential for your request to be understood.

The ability to enter a user's name and group at one arrow was introduced with Release 28. The previous method (enter PLATO name and press NEXT, then enter PLATO group and press NEXT) is also still available.

3. If the user you named is signed on, he or she will see a message like:

TERM-talk: mary smith/biology.

If the user you named isn't signed on, you'll see a message stating:

There is no "mary smith" of group "biology" present.

If the user you named is using any of the other terms, such as TERM-calc, spell, or ask, or has set her or his user flags to "busy", you'll see the message:

Mary Smith is busy, but has been told you called.

* Refer to the inside of the back cover for an important regulatory notice concerning the use of communications features.

4. If the person you named answers your message, two arrows appear at the bottom of your display. Type your message and press NEXT at the end of the line. This will erase your line and permit you to type more.
5. Before ending a TERM-talk conversation, PLATO etiquette suggests ending with "good bye" or another indication to the other party that the conversation has ended. Press SHIFT-BACK to end TERM-talk.

TERM-talk is not always available. Authors sometimes code lessons to inhibit specific TERM features from working. Generally, this coding technique is not recommended unless the use of a TERM would defeat the lesson objectives (for example, use of TERM-calc could defeat the objectives of an arithmetic test).

If you are taking a lesson that does not allow a specific TERM, it will be unavailable. If someone tries to TERM-talk with you while you are using a lesson that is programmed not to allow TERM-talk, you will see a message indicating that someone wants to talk with you but, when you press SHIFT-TERM, the message "What term?" and the arrow will not appear. To talk to that person, you must leave the lesson (press SHIFT-STOP).

There may be times while you are using PLATO services when you do not want your work to be interrupted by a user paging you to TERM-talk. TERM-busy and TERM-reject (discussed in the following sections) are two features you can use to either make yourself unavailable for TERM-talk or to reject a specific TERM-talk.

TERM-busy

TERM-busy allows you to temporarily turn off your ability to TERM-talk. When users try to TERM-talk with you, they receive a message saying you are busy but have been told they called. You will be notified when someone wants to TERM-talk with you.

The following steps describe how to use TERM-busy.

1. Press TERM (hold down SHIFT key while pressing TERM/ANS key) from any display.
2. Type "busy" when you see the "What term?" message; then press NEXT. You'll see a message saying you are unavailable for TERM-talk.
3. When someone tries to TERM-talk with you, she/he will see a message saying you are busy but have been notified they called. You'll see a message telling you who wants to talk with you.
4. To clear your TERM-busy status, press TERM, type "busy", and press DATA. Signing off also clears TERM-busy.

You can also set your TERM-busy status from the User Flags display. Refer to Usage Statistics and Flag Settings later in this section for information on how to use this display.

While you are using other TERMS, such as TERM-calc, TERM-spell, and TERM-ask, users trying to talk to you will be told that you're busy.

TERM-reject

TERM-reject allows you to reject a TERM-talk from another user without turning off your TERM-talk availability (as does TERM-busy). TERM-reject gives you the option of leaving a message for the user.

The following steps describe how to use TERM-reject.

1. When you receive a talk request from another user, press TERM, type "reject", and press NEXT at the "What term" arrow.
2. You have the option of typing a message (40 characters, maximum) to the user. Type your message and press NEXT, or simply press NEXT.
3. The user who tried to reach you will be notified that you are busy and will see whatever message you typed.

TERM-confer

TERM-confer allows you to join a group of users in a teleconference (refer to Using the Teleconference Feature, which immediately follows, for more information). This capability for group discussion and material review provides a timesaving method of communication.

USING THE TELECONFERENCE FEATURE

Teleconferencing is a PLATO feature which allows up to 200 participants to share visual presentations (graphics and text) while conducting a group telephone meeting. One user, called the master, leads the PLATO part of a teleconference. The master can use or edit any lesson as the other teleconference participants watch the display and/or talk on the phone. TERM-talk is also available while teleconferencing.

NOTE

Teleconferencing is not available on all systems offering PLATO services. Contact your site director for more information.

Starting a Teleconference

To start a teleconference, enter lesson "s@confer". Entering a list of sign-ons to define the participants in your teleconference is the first step. Only users included in this list may participate. When the list of sign-ons is finished, it may be stored in a dataset, nameset, or common for later use. (Datasets, namesets, and commons are discussed later in this section.) HELP for setting up a list of sign-ons is available in lesson "s@confer".

Once the sign-on list has been entered or identified, you start the teleconference. All sign-ons listed in the sign-on list will be paged, and will receive the message:

TERM-confer: yourname/yourgroup

at the bottom of their display. Only users specifically named in your list will be paged.

Joining a Teleconference

To join a teleconference when you are being paged, press **TERM** (a shifted key) and type "confer" at the "What term" arrow. If you have not been paged, press **TERM**, then type "confer" at the "What term" arrow and press **NEXT**. Then enter the sign-on of the person with whom you would like to confer and press **NEXT**.

TERM-reject and **TERM-busy** cancel a **TERM-confer** page. After rejecting a page or indicating that you are busy, you will not be paged again for the same conference, although you may still join it at your own initiative.

You may leave a conference at any time by pressing **SHIFT-BACK** or **SHIFT-STOP**.

COMMENTING ON LESSONS AND FEATURES

You can comment on **PLATO** lessons or features by using **TERM-comment**. **TERM-comment** allows you to write a 20-line message with questions or comments for the lesson author.

Depending upon the lesson or feature you are using, your comments may be seen by people other than the lesson author. You could comment on: published lessons, privately owned lessons, and **PLATO** features. Published lessons are listed in the Catalog of Published Courseware and their file names usually begin with a 0. Features include lessons like notes, your account, the Catalog of Published Courseware, the User List, your group file, and so on. If you comment on a published lesson, your comment goes to the lesson author or to Control Data personnel maintaining published courses. If you comment on privately owned courses, the author receives the comment if she/he has a notes file attached to her/his lessons or files. If you comment on a **PLATO** feature, your comment will first be read by consultants in group **p** or **pso**. Often a consultant contacts you to answer your question. If your comment reports a problem, the consultant forwards the information to the personnel who maintain **PLATO** features.

To learn how to use **TERM-comment**, refer to **Commenting on Lessons** in section 2 of this manual.

NOTES*

Notes files are some of the best PLATO communication tools available to you. They allow you to communicate with other users, lesson authors, and the people responsible for PLATO services. Notes files are also a great source of information as they can tell you about new features, capabilities, operating hours, and more.

Notes are indexed messages stored in PLATO. Each note can have a number of responses. Notes can contain questions or informative material on any topic.

Types of Notes Files

There are several types of PLATO notes files. They are:

- | | |
|-------------------|---|
| Personal Notes | Private notes between two users. Only the addressee of a personal note can read it. |
| General Notes | Notes between members of a defined user community. General Notes allow members to read or participate in a group discussion. General Notes are also used to relay PLATO announcements to all users. |
| Intersystem Notes | Notes files on several systems offering PLATO services which have been connected to function as one notes file. All notes and responses written in connected files appear in each file on each system. Intersystem Notes files are General Notes files that have been connected between or among systems. |
| Student Notes | Notes between students and instructors. Student Notes can be similar to Personal Notes or General Notes. Students and instructors can communicate privately or all students can participate in a group discussion or receive messages from their instructor. |
| Lesson Notes | Notes about a lesson written by users while they are studying the lesson. |

Notes File Access

Not all users can read and write notes in all notes files. Only users who have access to a given notes file can read or write notes in it. Within each notes file is a list of sign-ons. For each sign-on in the list, a level of access to the file is defined. Examples of access levels include the ability to read notes, write notes, or read and write notes. When you enter a notes file, your sign-on is checked. If your name, group, or user type is listed in the notes file, you are granted access; if not, you receive a message telling you you do not have access to the notes file.

Using General Notes

If you currently do not read notes, but want to get started, your first step is identifying a group of relevant notes files. An index titled "PLATO Communications" (figure 4-9) gives the names and brief descriptions of some very important notes files on the system you use.

To see the index, authors will type "N" when on the author mode display. Instructors will choose "Notes" from the PLATO Facilities display. From the display titled "Notes Options," instructors should choose "Public Notes and System Announcements."

* Refer to the inside of the back cover for an important regulatory notice concerning the use of communications features.

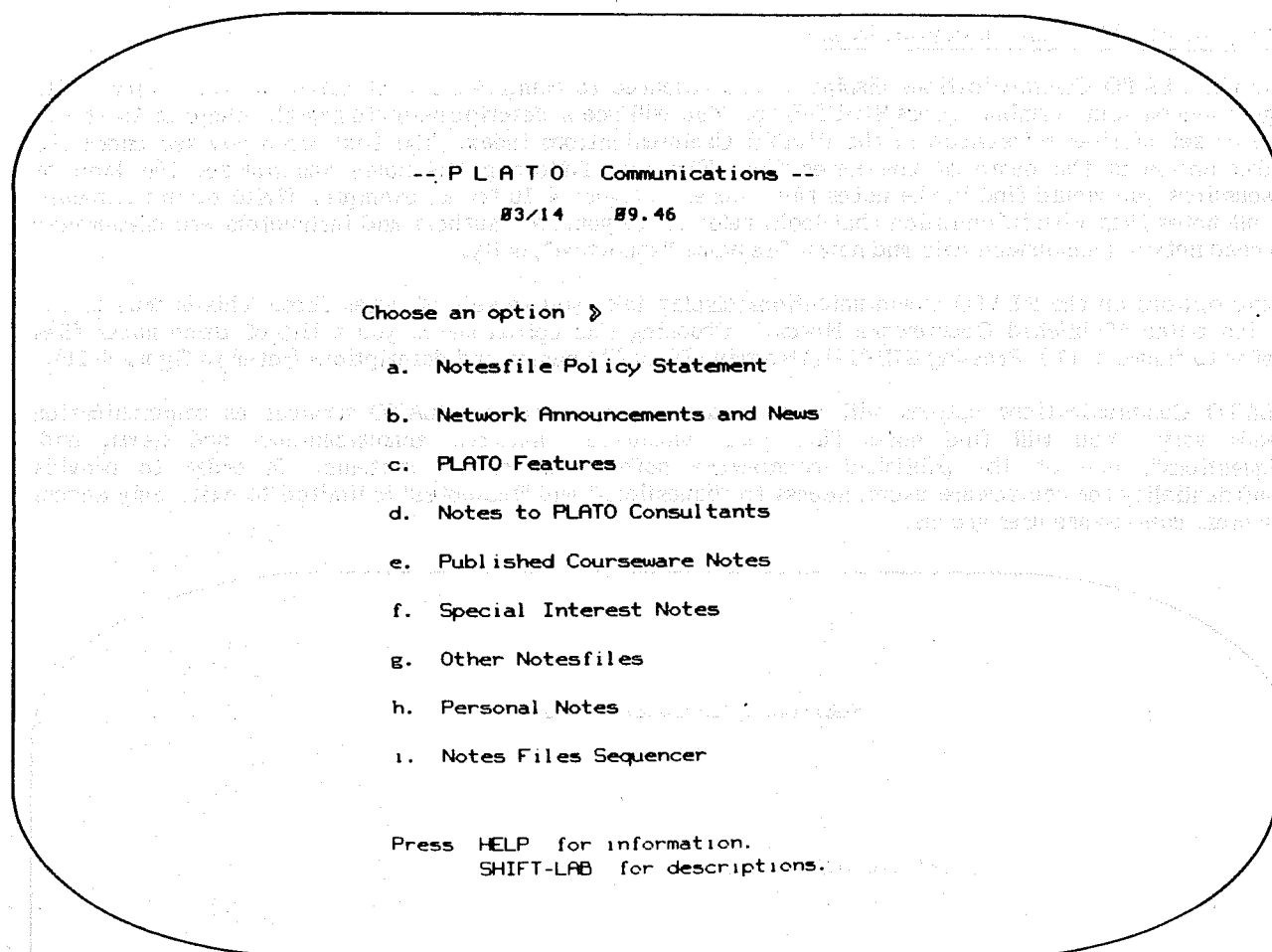


Figure 4-9. PLATO Communications Display

Following these instructions will take authors and instructors to the PLATO Communications display. Reproduced in figure 4-9, PLATO Communications summarizes for you the most frequently used and most important information sources on the system you use. Most options on this display will take you to an index of available notes files in a given category, such as published courseware notes, or to a particular notes file. For more information on using PLATO Communications to learn about PLATO uses, refer to Using the PLATO Communications Display, which immediately follows this discussion.

Two additional sources of relevant notes files (PLATO news) are available. One source is your account director. Most PLATO users work in groups, headed by an account director. You may be part of a ten-person group administering PLATO instruction in your company or school. Often such groups use a notes file for quick and easy communications among group members about students to be registered, new courses being added, or instructional problems that need resolution. Ask your account director if such notes files exist for your working group. Write down their names so you can be sure to read them.

Groups of authors, instructors, administrators or training directors who have common problems and experiences frequently establish discussion groups within a notes file. Reading the notes files reviewed on the PLATO Communications display, sending personal notes, or TERM-talking to writers of notes that interest you will introduce you to other PLATO users with your needs and interests and other relevant notes files. (Refer to Using Personal Notes and TERM-talk, both in this section, to learn how to use these communication tools.)

Using the PLATO Communications Display

Use the PLATO Communications display as one resource to compile a list of notes you read daily. With figure 4-9 on your terminal, press SHIFT-LAB. You will see a description including the name of the notes file or set of files referenced in the PLATO Communications index. The first word you see under the index option is the name of the notes file. The text following the name summarizes the kind of discussions you would find in the notes file. Refer to figure 4-10 for an example. Write down the names of all notes files with information that looks relevant to you. All authors and instructors are encouraged to read network announcements and news, file name "announce", daily.

Some options on the PLATO Communications display take you to sets of notes files. This is true of the option titled "Published Courseware Notes." Choosing this option shows you a list of three notes files (refer to figure 4-11.) Pressing SHIFT-LAB again offers file names and descriptions (refer to figure 4-10).

PLATO Communications options will vary across systems offering PLATO services as communication needs vary. You will find notes files like "announce", network announcements and news, and "Qquestions", one of the published courseware notes files on all systems. In order to provide confidentiality for courseware users, access to "Qquestions" and "lessnotes" is limited to write only access for most courseware user groups.

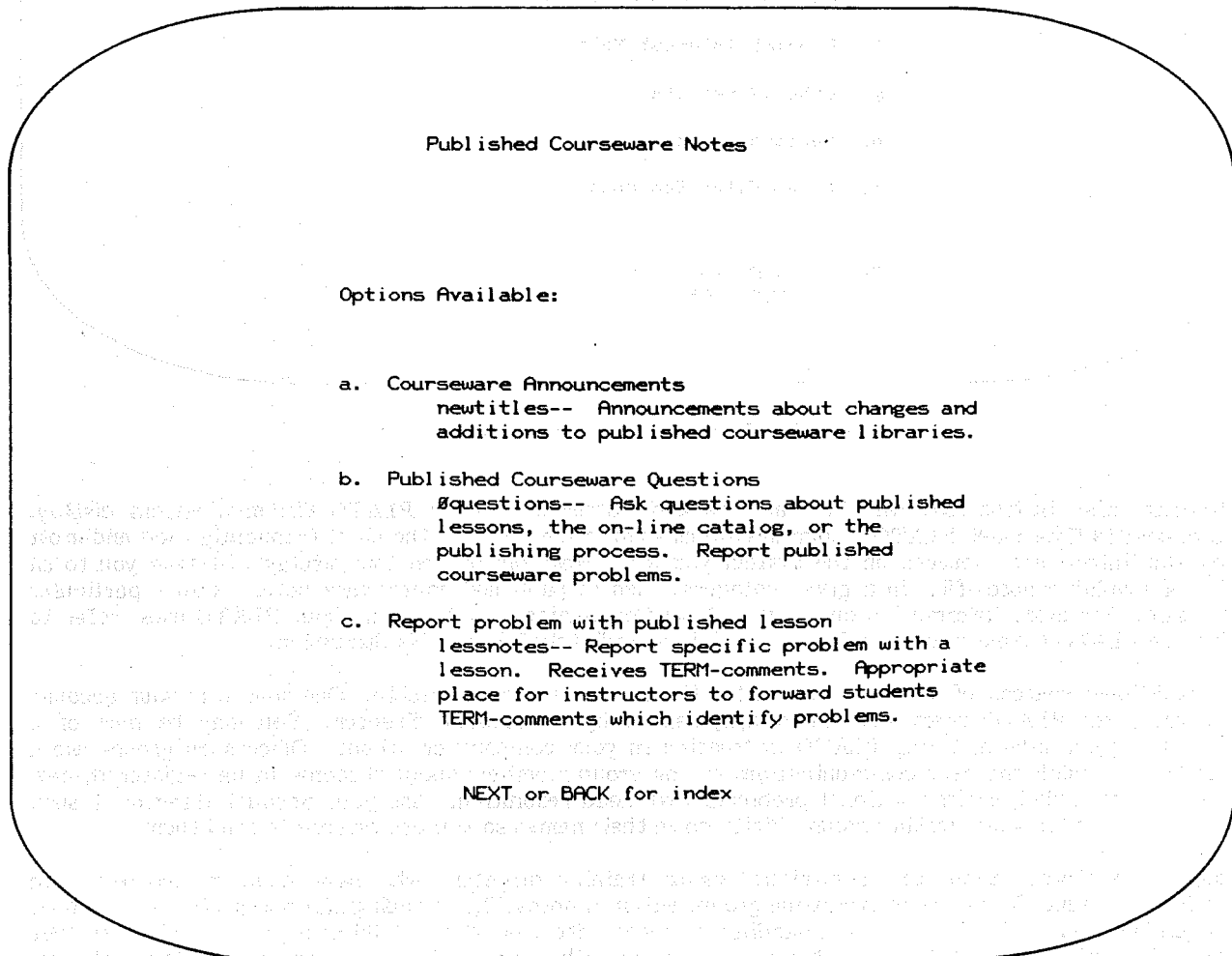


Figure 4-10. File Names and Descriptions of Published Courseware Notes Files

Explore the "Published Courseware Notes" and "Special Interest Notes" from the PLATO Communications display carefully. They're the greatest source of information unique to users on the system you use. Write down the names of all notes files of interest to you.

Three PLATO Communications options organize access to other communications features. Choosing "Other Notesfiles" allows you to read any named notes file to which you have access. The "Personal Notes" option will take you to new notes you have received and allow you to write personal notes. (Refer to Using Personal Notes later in this section for more information.)

The notes files sequencer organizes the notes files you read, saving you time by showing you only the notes and responses you haven't yet read. To be sure you always keep up with the PLATO news relevant to you, enter the names of all the notes files you want to read in your own notes files sequencer. (Refer to Using the Notes Files Sequencer later in this section to learn how to organize the notes files you read.)

One PLATO Communications option isn't related to notes files. PLATO Features is an electronic magazine distributed by Control Data three times each year to all systems offering PLATO services. PLATO Features describes new PLATO features, explaining new terminology, suggesting when and why these features would be useful to you. New issues of PLATO Features are announced in network announcements and news, the file named "announce". Typically, PLATO Features is distributed in February, June, and October.

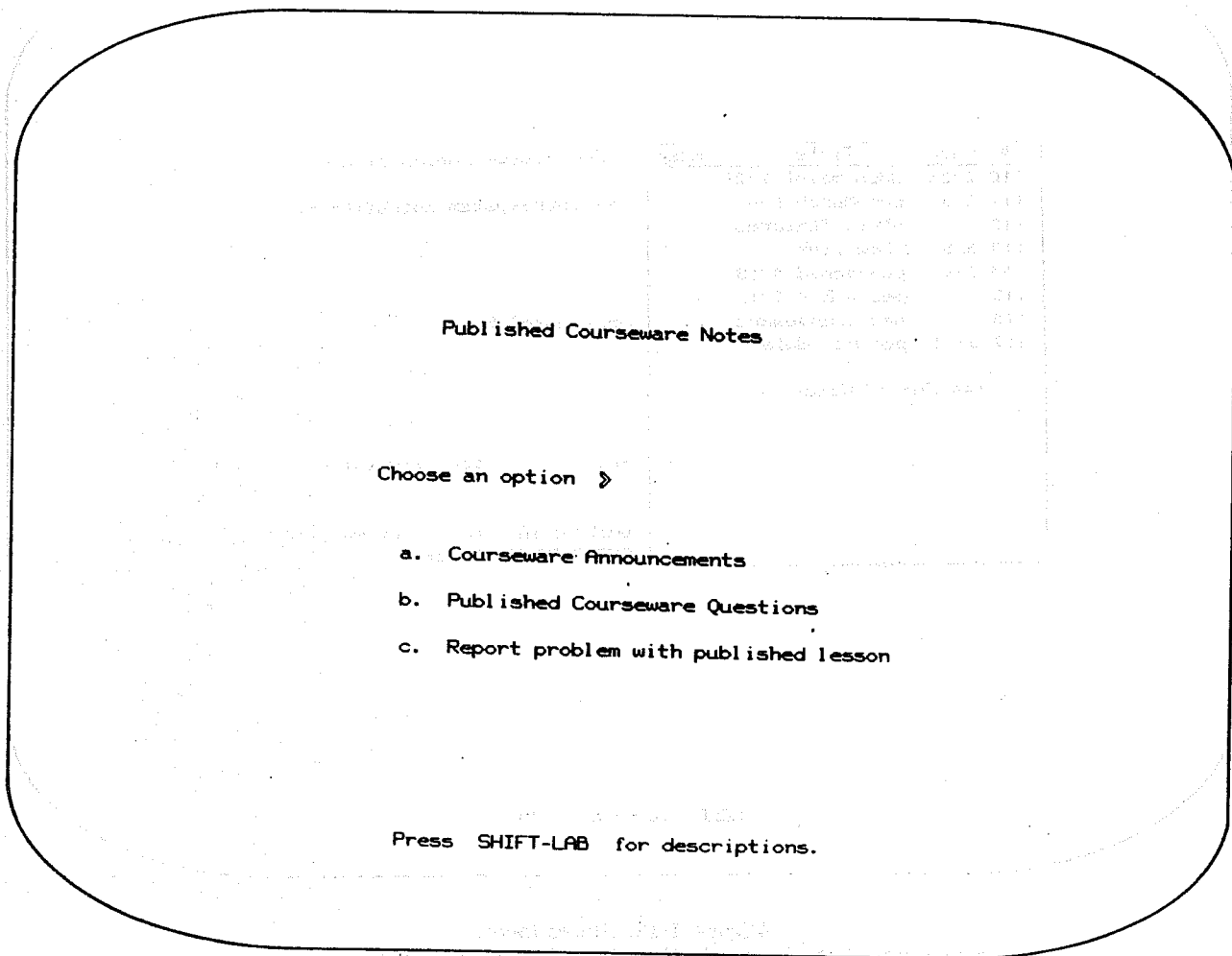


Figure 4-11. Index of Published Courseware Notes Files

Reading General Notes

The first display you see after entering a General Notes file is the index (refer to figure 4-12). It contains a list of notes in the file and directions on how to read and write notes.

The index lists an identifying number for each note, the date each note was written, note titles, and the number of responses to each note. The note number is the identifier you type to read a note.

The following steps describe how to read a general note.

1. The index (refer to figure 4-12) contains the names of the nine most recently written notes.
 - a. To select a particular note to read, type its number and press NEXT.
 - b. To see a list of the nine notes written previously, press BACK. To read a particular note, type its number and press NEXT. Repeated pressing of the BACK key displays the nine notes written before the notes you currently see in the index.

#	Date	Title	Resp
110	2/24	cdsn maint 2/27	
111	3/3	pca March 5-6	
112		plato features	
113	3/8	slow link	
114	3/9	pea sched 3/10	
115		pea + R29 3/12	
116		new courseware	
117	3/11	pea R29 delay	

*** End of Notes ***

PCE System Announcements
** intrasystem notesfile **

What note? >

Press LAB for file policy

SHIFT-DATA to see access list
SHIFT-BACK to exit

Press HELP for information

Figure 4-12. Notes Index

A complete list of notes in the file and directions on how to read and write notes are contained in this display.

- c. To see the index of the first notes in the notes file (without seeing the list of all notes in the file), press SHIFT - (minus).
 - d. To return to the end of the notes file index (the most recently written notes), press SHIFT +. You can always tell when you are at the end of the notes index because the last note in the file is followed by an "End of notes" message.
2. After you type the number of the note you want to read and press NEXT, you'll see the note. You can either press LAB to read each response to the note, or press NEXT to read the next note in the file.

NOTE

Responses to notes are not regarded as new notes (titled, numbered, and dated) because they all relate to the same topic.

Writing General Notes

You can write a general note to start a new discussion or to respond to an existing note. Writing notes requires a brief introduction to the notes editors.

An editor is a lesson which allows you to enter, review, correct, and store the text of a note. The same editor can be used to write all kinds of notes: general, personal, student, lesson, and intersystem. Two editors exist; authors may choose the one they prefer to use. Students use the "easy" editor. To learn how to use these editors, refer to Using the Notes Editor (Authors) or Using the Easy Editor (Instructors and Authors) both under Writing Notes later in this section.

Learning General Notes Features

Several options are available to you while you are reading a general note. Some of these features allow you to send a personal note to the author of the note you are reading, talk (TERM-talk) to the author of a note, and see the current time and date.

To see a complete list of the features available to you while reading a general note, press HELP while reading a general note.

Reading Archived Notes

Notes files have a maximum length; therefore, it is sometimes necessary to store old notes to make room for more recent ones. Stored notes are called archived notes. A unique characteristic of archived notes is that you can no longer respond to them. Archived notes exist only for user reference. No new responses are accepted or stored. The following steps describe how to read archived notes.

1. From the notes files index (refer to figure 4-12), type "a" and press BACK. You'll see the most recently archived notes file. Follow the procedure for reading general notes to read archived notes.
2. To see another archived file, repeat step 1.
3. To leave the archived files and return to the most recent notes file, type "new" and press NEXT. Remember to look for the "End of notes" message following the last note in the file.

Using the Notes Files Sequencer

Using the sequencer saves time and assures you don't miss important PLATO information. The sequencer lists all the files you want to read, remembers the date and time you last read each of the notes files in your list, and directs your attention to only those notes and responses added to each file since the last time you read it. All PLATO authors and instructors are encouraged to set up a notes file sequencer and use it daily.

To set up a sequencer for the notes files you read, choose the "Notes Files Sequencer" option from the PLATO Communications display (figure 4-9). You'll be taken to the sequencer editing options (figure 4-13). At the arrow, enter the names of notes files you plan to read daily. Type the file name then press NEXT. A second arrow will appear, asking you to enter a list position for each file. When time runs short, you can read only the most important files you've listed. The sequencer will keep track of when you last read the lower priority files. When you have time, you will be able to read all the notes written since you last read each file.

-- Sequencer Editing Options --

Enter file name >

HELP available

SHIFT-LAB for bypass options

Figure 4-13. Sequencer Editing Options

After your list is complete, you can press SHIFT-LAB to set some sequencer options available to you. Sequencer bypass options let you control how the sequencer will work. Press HELP for information on bypass option controls. Recommended bypass options are:

ON Entry Bypass
OFF Exit Bypass
OFF File Bypass

This set of options takes you immediately to the first new information in a file, without stopping at the index of the notes file you are reading. (Refer to figure 4-12, a sample notes file index.) New information could be a new note, or a new response to an existing note. When a new response has been written to an existing note, the sequencer will first take you to the note. Reviewing the note orients you to the discussion. Pressing DATA takes you to the new response.

Setting the exit bypass option to off assures that you see the notes files sequencer display (figure 4-14) before going on to the notes file named on the display. Setting the file bypass to off shows you a message when no new notes have been written in a file before taking you on to the next file.

After your sequencer list of notes files is entered, you can read notes daily by simply choosing the notes files sequencer option from the PLATO Communications display.

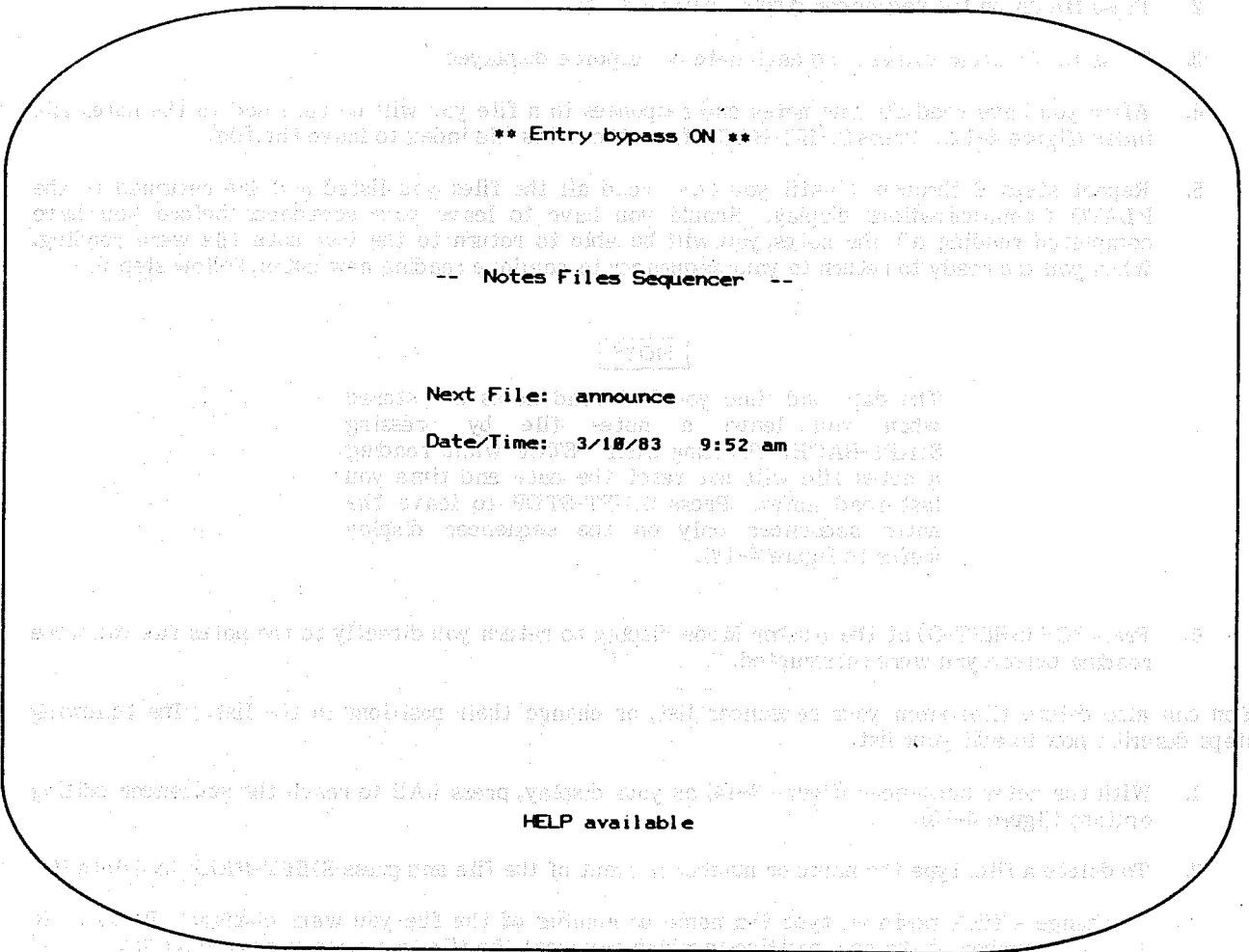


Figure 4-14. Notes Files Sequencer

Instructions for first-time notes sequencer use with bypass options set as previously noted:

1. From the PLATO Communications display (figure 4-9) choose the notes files sequencer.
2. Press DATA on the notes files sequencer display (figure 4-14).
3. On the notes index (figure 4-12) choose the number of a note and begin reading. (Because this is your first use of the sequencer, no record of the last date and time you read notes is available. So, read the notes you want to read. The date and time you leave the file will be stored for future sequencer uses.) Read notes in the file according to instructions given in Reading General Notes in section 4.
4. When you have read all new notes and responses, you will be returned to the notes index (figure 4-12). Press SHIFT-BACK to leave the file.
5. Repeat steps 2 through 4 until you have read all the notes files in your list and are returned to the PLATO Communications display.

Instructions for daily notes sequencer use (after the first use) with bypass options set as previously noted:

1. From the PLATO Communications display (figure 4-9) choose the notes files sequencer.
2. Press DATA on the sequencer display (figure 4-14).
3. Press DATA after you've read each note or response displayed.
4. After you have read all new notes and responses in a file you will be returned to the notes file index (figure 4-12). Press SHIFT-BACK from the notes file index to leave the file.
5. Repeat steps 2 through 4 until you have read all the files you listed and are returned to the PLATO Communications display. Should you have to leave your sequencer before you have completed reading all the notes, you will be able to return to the last note file were reading. When you are ready to return to your sequencer to continue reading new notes, follow step 6.

NOTE

The date and time you last read notes are stored when you leave a notes file by pressing SHIFT-BACK. Pressing SHIFT-STOP while reading a notes file will not reset the date and time you last read notes. Press SHIFT-STOP to leave the notes sequencer only on the sequencer display (refer to figure 4-14).

6. Press "O" (SHIFT-O) at the Author Mode display to return you directly to the notes file you were reading before you were interrupted.

You can also delete files from your sequencer list, or change their positions in the list. The following steps describe how to edit your list.

1. With the notes sequencer (figure 4-14) as your display, press LAB to reach the sequencer editing options (figure 4-13).
2. To delete a file, type the name or number in front of the file and press SHIFT-HELP to delete it.
3. To change a file's position, type the name or number of the file you want changed. Press LAB. Type the number of the new position in which you want the file to appear and press NEXT.
4. Press HELP for more information.

Using Personal Notes

Personal Notes are private notes between two PLATO users. They allow two users to communicate on an individual and personal basis. Only the user to whom a note is addressed can reach the personal note. To write a personal note, go to the Personal Notes display (figure 4-15).

Authors (do one of the following steps):

- From Author Mode, press SHIFT and type "P". You will see the Personal Notes display.
- From Author Mode, press SHIFT and type "N". You will see the PLATO Communications display. Type the letter in front of the "Personal Notes" option. Then you will see the Personal Notes display.

Instructors:

1. From the PLATO Facilities display, choose the "Notes" option by typing its number.
2. Type the number in front of the "Personal Notes" option. Then you will see the Personal Notes display.

PERSONAL NOTES

Press: LAB to read your notes
DATA for other options
HELP for explanation and policy

To whom do you wish to send a note:

Name >
Group
System

Figure 4-15. Personal Notes Display

From the Personal Notes display, you can read, write, save, copy, and forward personal notes. The following describes how to read and write personal notes.

Reading Personal Notes

When someone has sent you a personal note, the Author Mode display or the PLATO Facilities display shows a message indicating you have a personal note to read. This message, "Personal Notes", is displayed each time you receive a new note, and remains until you read all new notes.

To read your notes, go to the Personal Notes display and press LAB. You will see your first new personal note.

After you read your note, you can do one or more of the following steps.

- Press NEXT to read the next note addressed to you.
- Press SHIFT-LAB to respond to the note.
- Press SHIFT-HELP to delete the note.
- Press BACK to read previous notes.
- Press SHIFT-BACK to return to the Personal Notes display.

Writing Personal Notes

You can write a personal note from the Personal Notes display, or respond to a note written to you while looking at the note to which you want to respond.

To write a personal note, go to the Personal Notes display and type the sign-on of the person to whom you will write the note. Press NEXT after each entry (name, group, system). You will see either the insert display (for authors) or the easy editor (for instructors). Type your note using the same procedure described for general notes in Writing Notes later in this section. Press SHIFT-NEXT to send your note or press SHIFT-BACK to cancel the note.

Using Lesson Notes

Lesson notes are comments about a lesson written by those studying the lesson. They are stored in a Lesson Notes file attached to the lesson by its author.

Notes in the Lesson Notes file are written by PLATO users using TERM-comment. TERM-comments are usually written to point out problems within a lesson such as unclear instructions, confusing explanations, incorrect answers, and so forth. From these comments, an author can rewrite a lesson to make it more understandable. Lesson Notes files are usually used only during the early development and testing of a lesson or set of lessons.

As an author, you can attach a Lesson Notes file from the block listing display (figure 4-16). From the block listing display, press DATA and choose the "Associated files" option by typing the letter in front of it. Then choose the "Lesson Notes file" option. Indicate the notes file in which you want to store comments by typing its name and pressing NEXT.

Read lesson notes daily by listing the Lesson Notes file in your notes files sequencer (refer to Using the Notes Files Sequencer earlier in this section).

Although instructors do not write lessons and therefore cannot set up Lesson Notes files, they can still receive TERM-comments from users about lessons in their curricula. If an instructor creates a Student Notes file and attaches it to a group, all TERM-comments made by students in the group are forwarded to the Student Notes file instead of to the author's Lesson Notes file. Authors and instructors should refer to Using Student Notes, which immediately follows, to learn how to create a Student Notes file and read and respond to student notes.

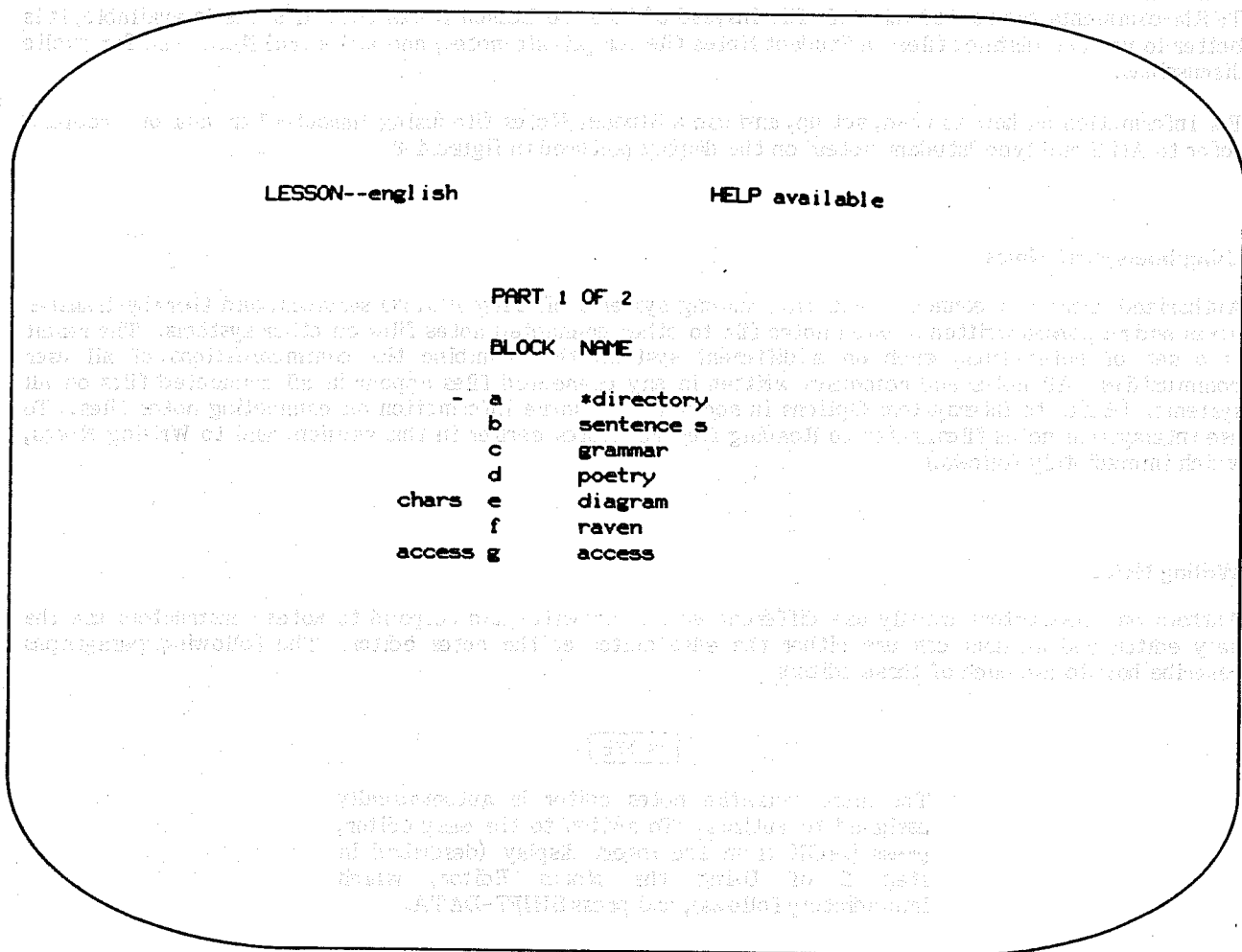


Figure 4-16. Block Listing Display

Using Student Notes

A Student Notes file has features specifically for students. It can provide private notes between the student and the instructor or general notes for all students in the group. This allows a student to send a comment or question to her/his instructor and receive a personal response. In the context of Student Notes files, an instructor is any author or instructor who has access to the Student Notes file.

When a student is working on a lesson and writes a TERM-comment, that comment goes into the Student Notes file. The network router, "mrouter", provides a direct entry into Student Notes for the student, and other routers can do so.

The network router, "mrouter", and other routers can also allow students to enter the Student Notes file and read all of the notes, as if it were a General Notes file. This, however, defeats the privacy aspect of the Student Notes file. The only advantage of using a Student Notes file in this manner is that it combines the functions of two files: the file behaves much like a General Notes file, and TERM-comments are routed into this file instead of into the Lesson Notes file. If space is available, it is better to use two distinct files: a Student Notes file for private notes, and a General Notes file for public discussions.

For information on how to read, set up, and use a Student Notes file (using "mrouter" or your own router), refer to AIDS and type "student notes" on the display pictured in figure 4-8.

Using Intersystem Notes

Authorized users can connect notes files among systems offering PLATO services, and thereby transfer notes and responses written in each notes file to other connected notes files on other systems. The result is a set of notes files, each on a different system, that combine the communications of all user communities. All notes and responses written in any connected files appear in all connected files on all systems. (Refer to Intersystem Options in section 5 for more information on connecting notes files. To use intersystem notes files, refer to Reading General Notes earlier in this section, and to Writing Notes, which immediately follows.)

Writing Notes

Authors and instructors usually use different editors to write and respond to notes. Instructors use the easy editor and authors can use either the easy editor or the notes editor. The following paragraphs describe how to use each of these editors.

NOTE

The more versatile notes editor is automatically assigned to authors. To switch to the easy editor, press BACK from the insert display (described in step 2 of Using the Notes Editor, which immediately follows), and press SHIFT-DATA.

The notes, Documentor, and lesson editors all function in the same manner.

Using the Notes Editor (Authors)

1. Do one of the following, depending upon the kind of note you want to write.
 - To write a new note (a note on a new topic), press SHIFT-LAB from the notes file index (refer to figure 4-10).

- To respond to a note already written, press SHIFT-LAB from the note to which you want to respond. For example, to respond to note 10, your display must show the text of note 10 or an existing response to note 10. Press SHIFT-LAB.
- To write a personal note, authors should type P on the Author Mode display; instructors should choose the "Notes" option on the PLATO Facilities display and "Personal notes" on the next display.

After entering the name, group and system (pressing NEXT after each) of the user to whom you are sending the note, go to step 2.

2. You'll see "Insert Mode" in the upper right corner of the display and an arrow on the left side of the display (refer to figure 4-17). The upper left corner of the display tells how much space is available for you to insert text. Most notes are restricted to 20 lines (or 120 computer words). Each time you press NEXT after typing a line of text, the space-available numbers change to reflect how much space is left for your note. Insert mode means you are ready to insert (type) lines of text.

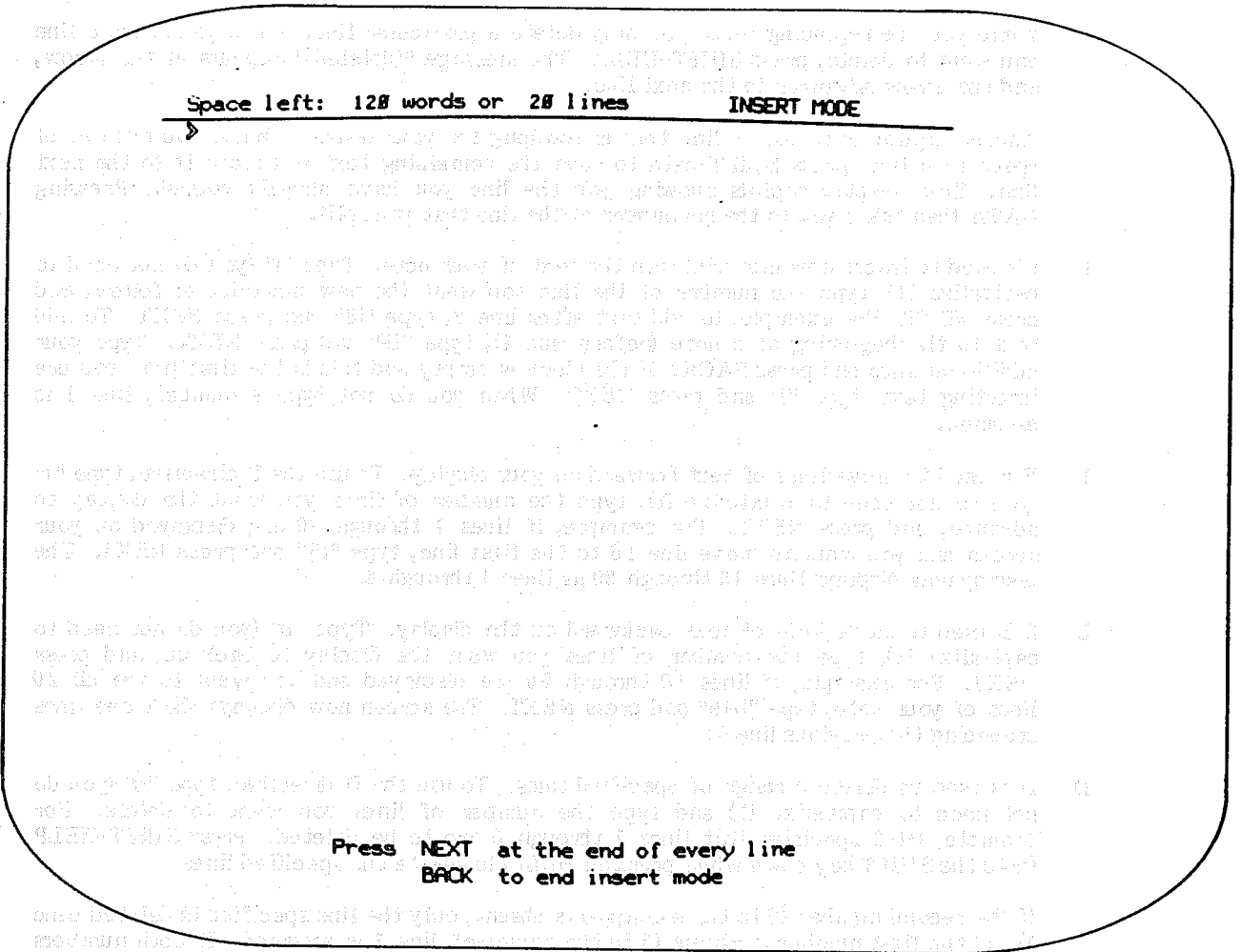


Figure 4-17. Notes Editor
From this display, you can type the text of your note.

3. Press **HELP** for more information on writing notes.
4. Type your note. Press **NEXT** at the end of each line to continue typing. Pressing **NEXT** advances the arrow one line at a time.
5. Press **BACK** when you are finished typing your note. Pressing **BACK** takes you out of insert mode and allows you to proofread and edit your note.
6. The following editing directives help you edit your note.

R **R** is used to replace or change text within a line. Type "r" (you do not need to capitalize it), type the number of the line you want changed, and press **NEXT**. For example, to correct an error in line 3, type "r3" and press **NEXT**. You are now in replace mode. You see the line you want to edit with an arrow directly under it. You can either retype the entire line correctly, or use the **COPY** and **EDIT** keys to edit the line. (Refer to appendix A to learn how to use the **COPY** and **EDIT** keys.) After you complete your corrections, press **BACK**.

While you are replacing lines, you may delete a particular line. When you reach a line you want to delete, press **SHIFT-HELP**. The message "(deleted)" appears at the arrow, and the arrow advances to the next line.

Another option is to split a line that is too long for your display. When you run out of space in a line, press **SHIFT-data** to save the remaining text and move it to the next line. Your display replots showing you the line you have already copied. Pressing **DATA** then takes you to the remainder of the line that you split.

I **I** is used to insert new material into the text of your note. Type "i" (you do not need to capitalize it), type the number of the line you want the new material to follow, and press **NEXT**. For example, to add text after line 8, type "i8" and press **NEXT**. To add text to the beginning of a note (before line 1), type "i0" and press **NEXT**. Type your additional lines and press **BACK**. If the block is empty and this is the first time you are inserting text, type "i" and press **NEXT**. When you do not type a number, line 1 is assumed.

F **F** is used to move lines of text forward on your display. To use the **F** directive, type "f" (you do not need to capitalize it), type the number of lines you want the display to advance, and press **NEXT**. For example, if lines 1 through 20 are displayed on your screen and you want to move line 16 to the first line, type "f5" and press **NEXT**. The display now displays lines 16 through 20 as lines 1 through 4.

B **B** is used to move lines of text backward on the display. Type "b" (you do not need to capitalize it), type the number of lines you want the display to back up, and press **NEXT**. For example, if lines 10 through 20 are displayed and you want to see all 20 lines of your note, type "b10" and press **NEXT**. The screen now displays the three lines preceding the previous line 1.

D **D** is used to delete a range of specified lines. To use the **D** directive, type "d" (you do not need to capitalize it) and type the number of lines you want to delete. For example, **D1-6** specifies that lines 1 through 6 are to be deleted. Press **SHIFT-HELP** (hold the **SHIFT** key down while pressing **HELP**) to delete the specified lines.

If the second number (6 in the example) is absent, only the line specified is deleted (line 1). If the first number is absent (1 in the example), line 1 is assumed. If both numbers are absent (only **D** is typed), line 1 is assumed. Press **SHIFT-HELP** to delete.

You may also type D* (asterisk) to mean everything from the top line on the display to the end of the note. Another alternative is to type D3-* (meaning delete lines 3 through the end of the note).

SHIFT-HELP is a special keypress used for deleting text. It is used for deletions because it is not likely to be pressed accidentally. A way to be sure the lines you requested are deleted is to check the "Space available" entry at the top of the note. When text is deleted, the space available increases.

- S S is used to save lines of text. Type "s" (you do not need to capitalize it), and type the number of the single line you want to save, and press NEXT. The upper right corner of your display flashes a message similar to "10 words". This signifies that you have saved that much text.

You may also save more than one line. Typing "S*" saves all of the lines from the top of the display to the end of the note. Typing "S1-5" saves lines 1 through 5. Typing "5-*" saves everything from line 5 to the end of the note.

- A A is used to append (add) lines of text to the lines already saved with the S directive discussed earlier. Type "a" (you do not need to capitalize it), type the number of the line you want to save, and press NEXT. You may also save more than one line by using the same type format used by the S directive. For example, "A1-5" appends lines 1 through 5. Typing "A*" saves all lines from the top of your display to the end of the note. Typing "A4-*" saves all text from line 4 to the end of the note.

NOTE

When you use the S directive to save a line(s), that line(s) is stored by the computer in a save buffer. This allows you to reinsert that saved text somewhere else in your note. (Refer to the IS directive, which is described later, to learn how to reinsert saved text.)

- DS DS is used to save text and then delete it from the display. Type "ds" (you do not need to capitalize it), type the number of the line you want to save and delete from the display, and press SHIFT-HELP.

You may also use the same format for saving and deleting more than one line as you do with the S and D directives. For example, DS* saves, before deleting, all text from the top of the display to the end of the note. DS1-5 means to save, before deleting from display, lines 1 through 5. DS4-* means to save all text from line 4 to the end of the note, before deleting.

DA DA is used to append text to text already saved with the S directive, and then delete it from the display. Appended text is added to your save buffer, following any text already saved.

The DA directive is used just like the DS directive. For example, DA* appends all text from the top of your display to the end of the note, before deleting it.

DA1-5 appends text in lines 1 through 5 before deleting it. DA4-* appends all text from line 4 to the end of the note.

NOTE

Typing a new S or DS directive deletes everything you had saved and replaces it with the new text you are saving.

IS IS is used to insert saved (and appended) text in a location specified by you. Locate the line that you want the saved text to follow (line 5 for example), and type "IS5". Press NEXT and your display will replot, showing all of your inserted text following line 5.

You may use the IS directive to insert the same saved and appended text in more than one note or another notes file. To do this, save the text using the method(s) previously described. Leave the note or notes file you are in by pressing BACK or SHIFT-STOP, and type the name of another notes file at the Author Mode display.

You may start a new note or respond to an existing note in the notes file. (Refer to Writing Notes.) Once you decide where you want to insert the saved text, use the IS directive as previously described.

You may also save text from a note and insert it in a section(s) of a Documentor file. Once you have saved the text you want, leave the notes file you are in and type the name of the Documentor file you want to enter.

Refer to Using Documentation Features later in this section for more information about Documentor. Lesson "dintro" also provides information about Documentor.

7. After you write and proofread your note, do one of two things.

- Press SHIFT-NEXT to send the note and include it in the General Notes file.
- Press SHIFT-BACK to cancel the note.

Using the Easy Editor (Instructors and Authors)

1. To write a general note, do one of two things.

- To write a new note (a note on a new topic), press SHIFT-LAB from the notes file index display.
- To respond to a note already written, press SHIFT-LAB from the display of the note or response to which you want to respond. For example, to respond to note 10, your display must show the text of note 10. Press SHIFT-LAB.
- To write a personal note, authors should type "P" on the Author Mode display; instructors should choose the "Notes" option on the PLATO Facilities display and "Personal Notes" on the next display.

After entering the name, group and system (pressing NEXT after each) of the user to whom you are sending the note, go to step 2.

2. Authors who are automatically taken to the notes editor should press BACK, then SHIFT-DATA. Instructors go to step 3.
3. You'll see a rectangular box with an arrow in the upper left corner. Editing instructions are listed below the box.
4. Press HELP for more information on how to use the editing directives.
5. Type your message. The text appears to the right of the arrow. Press NEXT at the end of each line to move the arrow to a new line. Your note can be up to 20 lines long.
6. If you make a mistake and need to change a line, move the arrow to the line you want to change by pressing NEXT or BACK. (BACK moves the arrow up, NEXT moves the arrow down.)
7. When the arrow is pointing to the line you want to change, press EDIT. Pressing EDIT erases the entire line. You can bring back the sentence one word at a time by pressing EDIT again, one press for each word. Make your corrections by using the ERASE key or inserting new words.
8. Insert a new line by pressing SHIFT-LAB. Position the arrow where you want to insert the new line and press SHIFT-LAB.
9. To delete a line, move the arrow to the first line you want deleted and press SHIFT-HELP. The remaining lines will be renumbered. You will be asked how many lines you want deleted. Type the number of lines you want deleted and press NEXT.
10. When you finish writing and correcting your note, do one of two things.
- Press SHIFT-NEXT to send the note and include it in the General Notes file.
 - Press SHIFT-BACK to cancel the note.

Using Notes Features

When you are reading general, personal, or student notes, a number of options are available. Press HELP while reading a note to see a list of options similar to figure 4-18. Most of the options are self-explanatory and easy to use. The following paragraphs describe some of these options in detail.

While you are reading your notes you may press:

NEXT	--	to see the next note
LAB	--	to see the next note
BACK	--	to see the previous note
SHIFT-BACK	--	to exit
SHIFT-"+"	--	to see the last note
SHIFT--"	--	to see the first note

(The Number keys will advance forward the corresponding number of notes.)

SHIFT-HELP	--	to delete that note
SHIFT-LAB	--	to respond to that person
SHIFT-COPY	--	to copy that note to a General Notes file
"D"	--	display the current date and time
"S"	--	to save that note
"A"	--	to append the note to your save buffer
"n"	--	replot that note
"P"	--	to respond to that person
"F"	--	to forward that note to someone else
"T"	--	talk to that person

Figure 4-18. Notes File Options

Copying Notes

You can copy notes from your Personal Notes or a General Notes file to another notes file using the copy directive. While looking at the note you want to copy, press SHIFT and COPY at the same time. You will see "copy to what file?" Type the name of the notes file to which you want the note copied, and press NEXT. The note will be copied as the last note in that file.

Saving Notes

Saving a note refers to temporarily storing a copy of a note before placing it in another file. A saved note can be inserted as part of a new note you are writing, or can be stored in a file other than a notes file (lesson or Documentor file). You can save a note using the save directive. While looking at the note

you want saved, press the SHIFT key and type "s". Your note is stored and you see the number of words and lines saved. Go to the file in which you want the note inserted, press SHIFT-LAB to create a new note, and press BACK to end insert mode, then type "is" and the number of the line directly above where you want the saved material inserted (for example, to insert saved material after line 8, type "is8" and press NEXT). Use the same "is" directive in a lesson block or Documentor file to insert your note.

NOTE

The save directive can only be used once before you transfer the saved material to a new file. Each time you type "s" to save a note, the original material is deleted and replaced. A maximum of 320 computer words can be saved at one time.

However, when less than 320 computer words have been saved, you add more information up to the 320 word limit by using the append directive. The following paragraph describes how to use the append directive.

Appending Notes

You can save additional material, up to a total of 320 computer words, using the append directive. It allows you to save additional text without deleting the original information. While looking at the material you want added, type a, and type the number of lines you want saved. Press NEXT. For example, to append (save) lines 1 through 4, type "a4" and press NEXT. The added information is added to the saved material.

Forwarding Notes

You can forward a note from your Personal Notes file or to another user's Personal Notes by using the forward directive. While looking at the note you want to forward, press SHIFT and type "F". You will see the Personal Notes display. Type the name, group, and system of the user to whom you want the note forwarded, pressing NEXT after each entry. You will see three options. Press SHIFT-NEXT to forward the note, SHIFT-LAB to edit the note before you send it, or DATA to write a new note (and cancel the forwarded note).

Using Notes File Director Options

Every PLATO notes file is controlled by a notes file director. He or she is responsible for the general management of the notes file. Some of the notes file director responsibilities are:

- Maintaining user access list for the notes file.
- Establishing notes file use and policy.
- Lengthening and shortening file space as necessary.
- Deleting inappropriate notes in the notes file.
- Allowing/disallowing connection to notes files on other systems.
- Archiving notes from the file.

USING REFERENCE TOOLS

Some PLATO reference tools are available only to authors, while others are available to all user types. Reference materials available are: a directory of PLATO authors, a list of current users, personal usage statistics, the Catalog of Published Courseware, the current time and date, and information about PLATO language commands and features (AIDS).

The following paragraphs describe the PLATO reference tools.

AIDS

AIDS is an on-line reference manual for authors and instructors which contains definitions and explanations of most of the PLATO features and all of the PLATO Author Language and Micro PLATO Language commands. To access AIDS, authors press SHIFT and type "A" from the Author Mode display. Instructors should choose AIDS from the PLATO Facilities display. Refer to Using AIDS earlier in this section for more information.

USING THE CATALOG OF PUBLISHED COURSEWARE

The courseware catalog lists all published PLATO courses. It is a tool for previewing courses and providing information about their components and authors. Similar to the card catalog in your local library, the PLATO catalog indexes curricula, courses, and lessons by title, author, subject, and file name. (All courses are reached using an electronic storage unit called a file. The file name is like a Dewey decimal or Library of Congress number. You use the file name to locate the file. For more information about PLATO Files, refer to Understanding File Structure and Use earlier in this section.)

Only published instructional materials are included in the catalog. Published materials have undergone rigorous editing and technical reviews to assure they are accurate, always respond to a user as documented, and meet Control Data's quality standards. Although unpublished lessons and courses exist on the system delivering PLATO services to you, they are not included in Control Data's courseware catalog. Users are urged to be very cautious when using unpublished lessons or courses they do not own or control. Unpublished materials may be seriously altered or deleted at any time. Use them only with the owner's agreement that they will remain available, workable, and unaltered.

Since 1981, PLATO instruction has been delivered both through a communications network and on flexible disks. The courseware catalog lists PLATO materials available for both network and flexible disk delivery. The PLATO catalog is available only through network services; no flexible disk version is available.

Authors and instructors reach the courseware catalog in different ways. Authors reach it from the Author Mode display by typing SHIFT-f, "F". Instructors can reach it from the PLATO Facilities display. Select the option titled, "Choose a lesson to study", then press LAB on the next display.

From the list of catalog options (figure 4-19) you can see a description of the catalog and its features and request lists of course materials arranged by title, author, subject, and file name. To see the catalog description, type "a" from the catalog options index. You will see a list of options describing various catalog features. Select an option by typing the number in front of it.

PLATO Catalog of Published Courseware

Materials Arranged by:

- (a) Titles
- (b) Authors
- (c) Subjects
- (d) Filenames

HELP available

Press LAB for New Titles
Press SHIFT-LAB for Courseware Queries
Press SHIFT-NEXT for Catalog Display Options

Figure 4-19. Courseware Catalog Options

This display provides you with an overall description of the catalog, as well as course materials arranged by title, author, subject, and file name.

To see a course list, type the letter in front of the index you want to see. To see a list of courses arranged alphabetically by title, select the title index. The following paragraphs describe how to use the title, author, subject, and file name indices.

Title Index

The title index (refer to figure 4-20) alphabetically lists the titles of all the PLATO courses. Although there is one alphabetical title index, lists of titles also appear throughout the catalog under subject headings and author names.

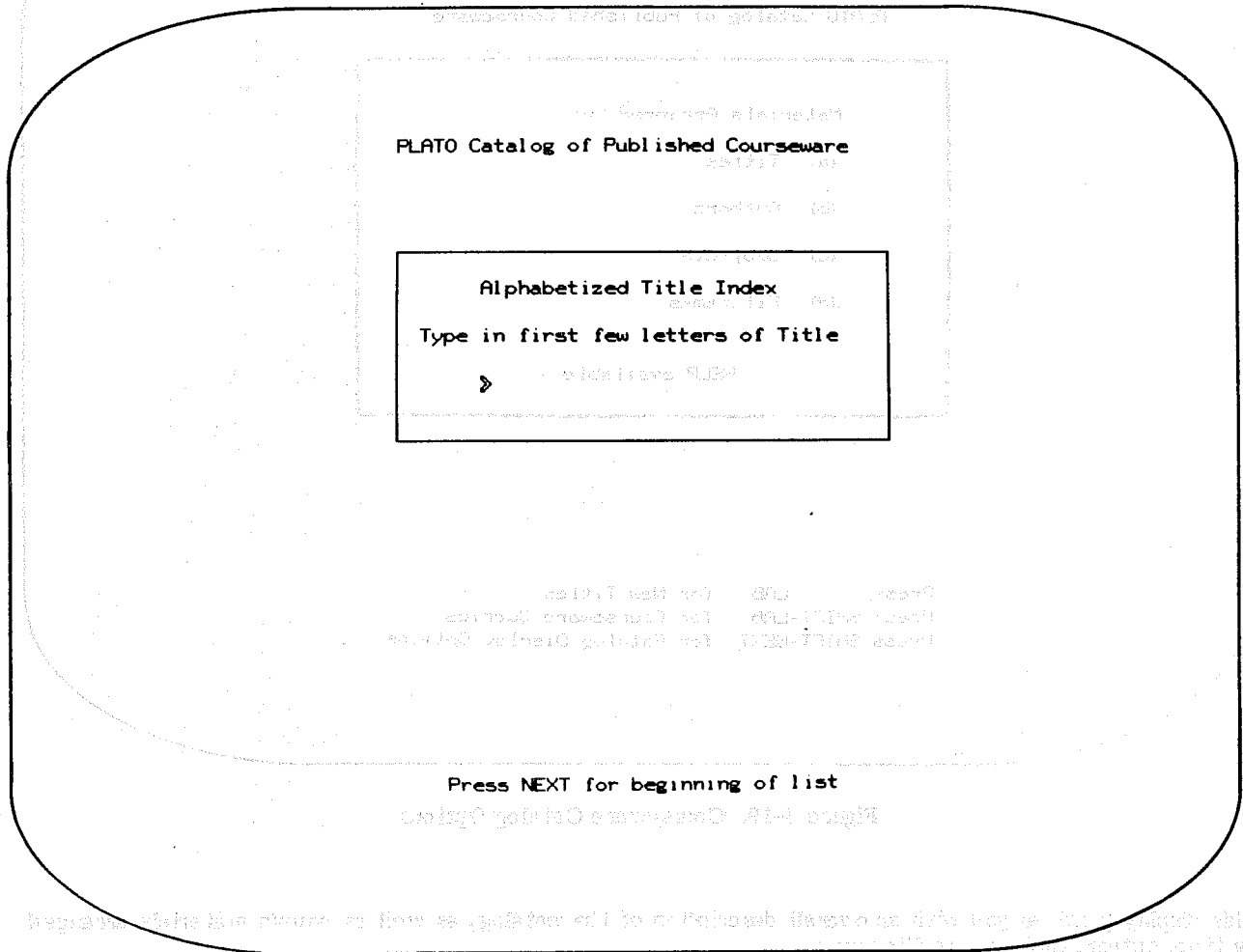


Figure 4-20. Course Catalog Title Index

You can request to see descriptions of courses by their titles from this display.

From the catalog title index, you can see course descriptions and try or review the courses. The following steps describe how to use the title index.

1. You can page through the index alphabetically (a, b, c, and so on), or you can quickly move to any part of the index (for example, from b to s). Press NEXT to advance alphabetically one page at a time and press BACK to reverse the index one page at a time.
2. To move quickly to a different alphabetical point in the index, type a few letters and press NEXT. To see titles that begin with ple, type "ple" and press NEXT.
3. You can type a specific lesson or course title and press NEXT to locate that lesson.

To see the course description or to preview a course, type the number in front of its title and press NEXT. You will see the course information (refer to figure 4-21).

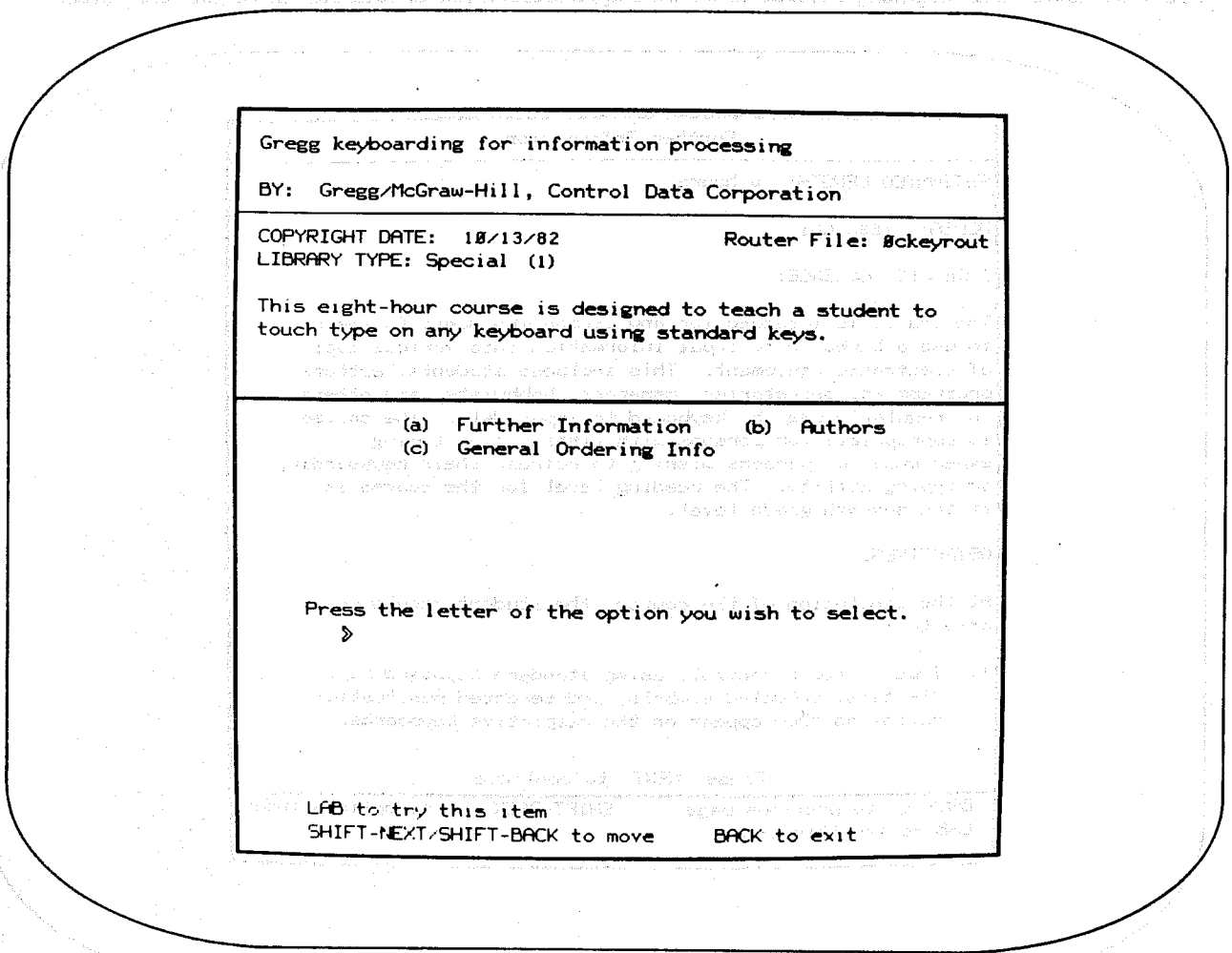


Figure 4-21. Course Information
This display gives you access to a course overview, and author and ordering information.

The lesson information display (figure 4-21) gives a brief description of the lesson; the name of the primary author(s) of the lesson; the copyright date; the file name; the library type; and options to select to see more information on the lesson, the names of all the lesson authors, and general ordering information. Press LAB to try a lesson or preview a course.

When you select "Further information", you will see figure 4-22. It presents a more detailed description of the course, the estimated length of time to complete it, the learning materials used, the audience for whom the course was originally written, and where applicable, a list of contents and a goal statement.

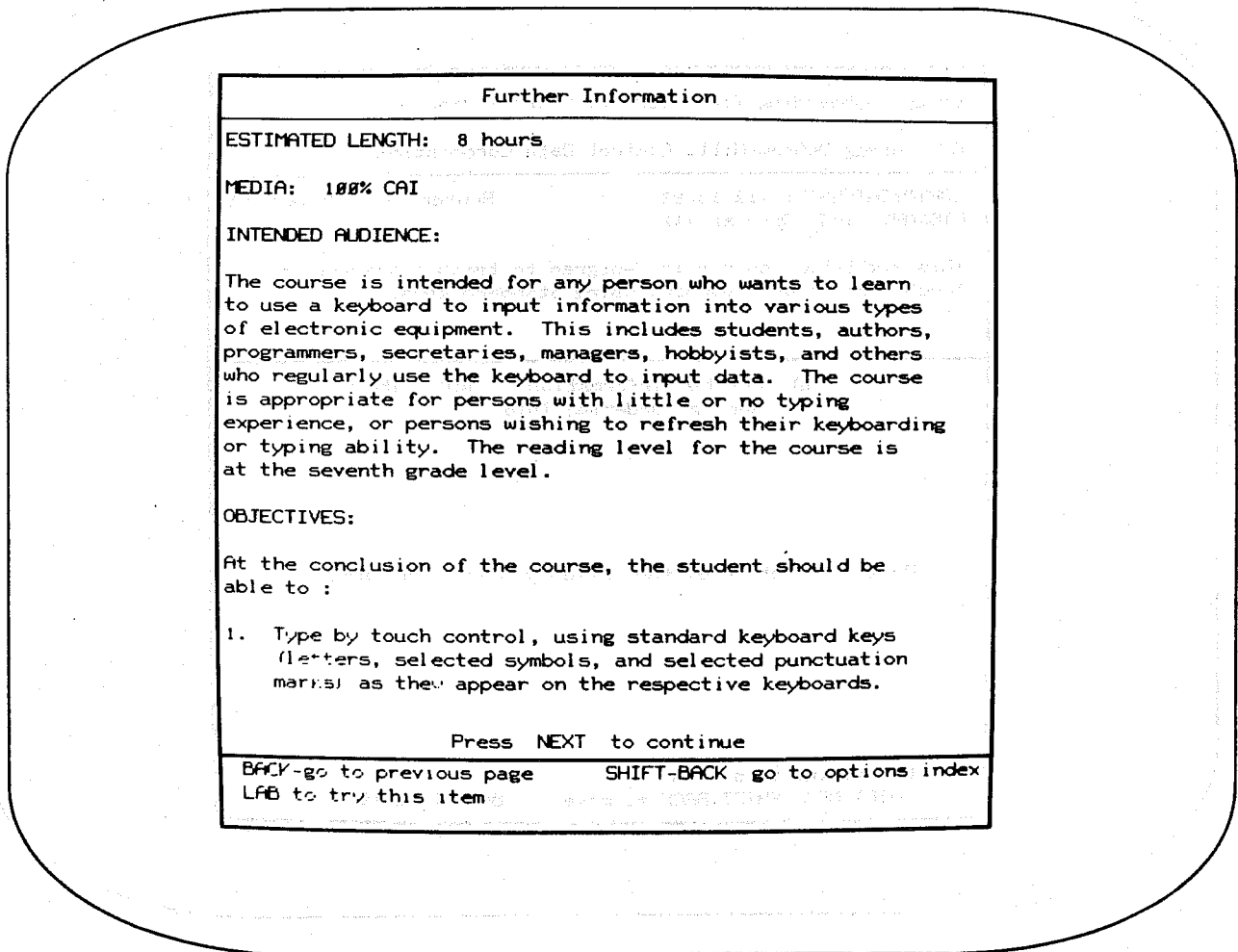


Figure 4-22. Course Description
From this display you can see more detailed information about a course.

Author Index

The author index alphabetically lists all the published PLATO authors. From the author index, you can see biographical information and the titles of lessons they have written.

You can page through the author index in sequential alphabetical order or you can quickly move to any part of the index by following the directions for the title index.

To see the titles of lessons written by an individual author, type the number in front of the author's name and press NEXT.

To see biographical information about an author, type the number in front of the author's name and press DATA.

Subject Index

The subject index alphabetically lists topics or keywords of PLATO courses. Keywords summarize the subject of a lesson or course. To find materials in the subject index, think of a keyword that summarizes the topic in which you are interested (mathematics, robotics, typing). Type a keyword at the arrow on the subject index and press NEXT. You can also page through the index alphabetically to see the entire list of course subjects. Press NEXT to advance the listing one display at a time, or press BACK to reverse the listing one display at a time. You can also move to any part of the index (for example, from b to g) by typing the alphabetical section you want to see.

After you find a subject of interest, you can see the titles relating to that subject. Type the number in front of the subject (keyword) and press NEXT. You will see a list of titles relating to that subject. This display operates the same as the title index described previously.

File Name Index

The file name index alphabetically lists the names of all the published PLATO files.

From this index, you can see the title, author, and library type of a lesson course or curriculum. You can also request to see more information on a specific listing by typing its file name.

To see more information on a specific listing, type the number in front of it and press NEXT. To move to another part of the index, type the letter(s) of the alphabet at which you want the listing to start and press NEXT.

USING THE PLATO AUTHOR LIST

As an author or instructor, you can see a list of all PLATO authors who have voluntarily included their names, and include your name in the list if you choose. Information available in the author list includes: each author's full name, principal sign-on(s), office and home phone numbers, mailing address, and authored subjects.

The following steps describe how to access and use the PLATO author list.

1. Do one of the following steps, depending upon your user type.
 - From the Author Mode display (for authors), type "authors", and press NEXT.
 - From the PLATO Facilities display (for instructors), select the "Choose a lesson to study" option. Type "authors" at the "What lesson" arrow and press NEXT.
2. You will see a directory of PLATO authors (figure 4-23).

Directory of PLATO Authors

pce system

Enter partial name >
or name/group

Press NEXT for alphabetical listing
DATA for another system
HELP for information
LAB for lesson statistics

Figure 4-23. Directory of PLATO Authors
From this display you can choose information on a particular author,
choose the author list for another system, or choose an alphabetical list of authors.

From this display, you can do any of the following steps.

- Type either the name of the author on whom you want to see information and press NEXT, or type the alphabetical list you want to see and press NEXT.
- Press NEXT to see an alphabetical list of authors (figure 4-24).
- Press DATA to see the PLATO author list for another system.
- Press HELP for more information on how to use the author list.

To include your name in the author list or to change your biographical information, press SHIFT-NEXT from the directory of PLATO authors. Type the letter in front of the information you want to include or change, type the information at the arrow, and press NEXT. Press LAB to change information not preceded by a letter.

You can search the list to identify authors in named subject areas. To search the list, go to directory of PLATO authors (figure 4-23). Type "X" and press NEXT. You'll see a list of subjects. Type the number in front of the subjects in which you are interested. After all subjects of interest are identified, type "X" to begin the search.

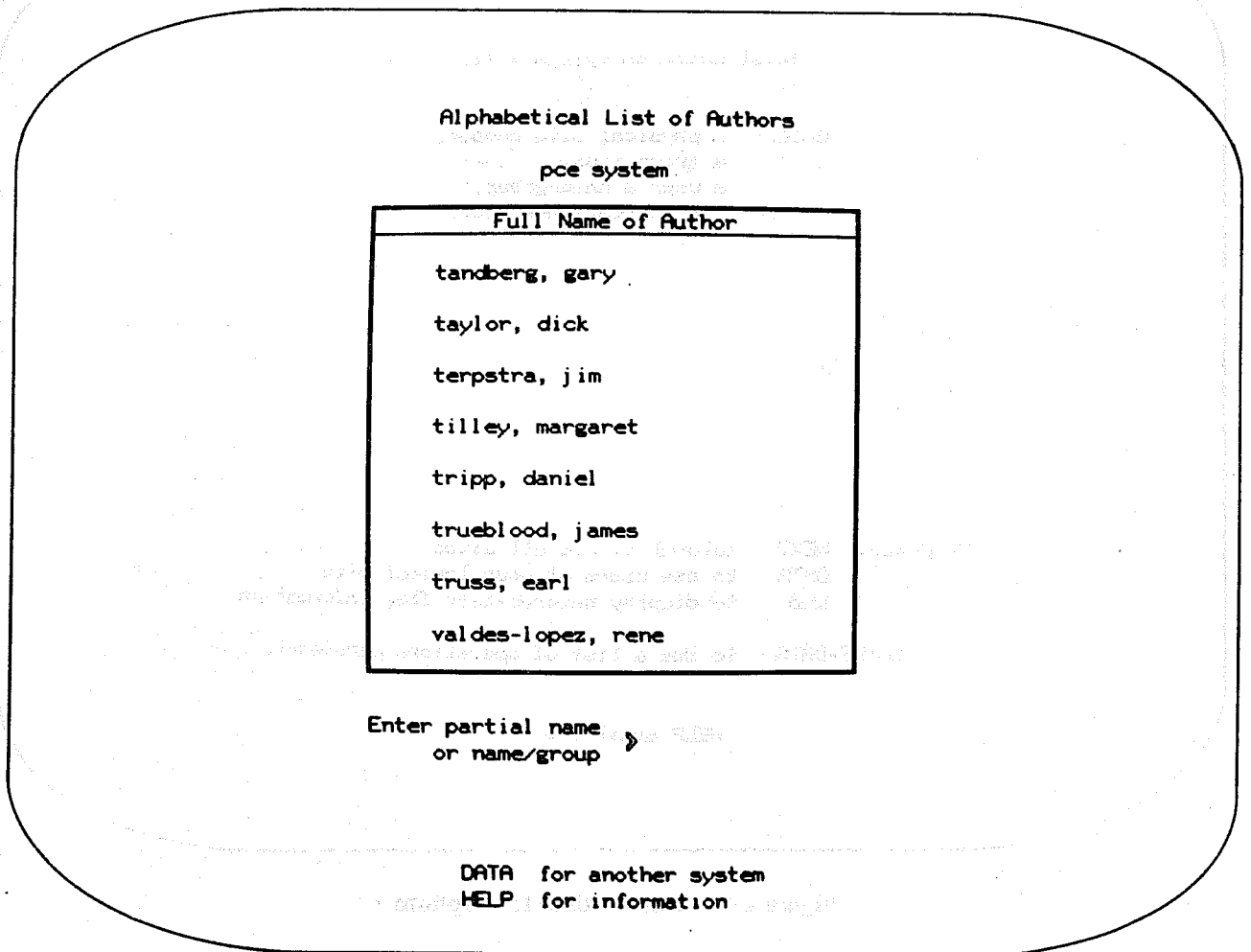


Figure 4-24. Alphabetical PLATO Author List

USING THE PLATO USER LIST

The PLATO user list displays the names of all authors and instructors currently using PLATO services who have voluntarily included their names in the list.

The following steps describe how to see the list.

1. Do one of the following steps, depending upon your user type.
 - From the Author Mode display (for authors), either press SHIFT and type "U", or type "users" and press DATA.
 - From the PLATO Facilities display (for instructors), select "Interactive communications" and then select to "See users on the system".

A display similar to figure 4-25 appears.

Total users on system = 126

Enter: a physical site number,
a group name,
a user's name/group,
or a site-station number.

>

Or press: NEXT (alone) to see all sites
DATA to see users at your logical site
LAB to display records/talk flag information
SHIFT-DATA to see a list of operations personnel.

HELP available

Figure 4-25. PLATO User List Options

2. Choose any of the following options.

- Press HELP for more information.
- Press LAB to set your user list options.
- Press DATA to see the users at your logical site (users with whom you share extended memory).
- Type a physical site number and press NEXT to see a list of the users at your physical site (a grouping of terminals related by communications hardware).
- Type a group name to see the users signed on from that group.
- Type a site station number (the number assigned to a specific terminal) to see who is using it.

USAGE STATISTICS AND FLAG SETTINGS

Usage statistics are kept for each PLATO author and instructor. The statistical information recorded includes the amount of time you have spent using PLATO services (both total time and individual sessions) and information about your user record, such as your user type, account name, logical site, and use of the central processing unit (CPU) and disk resources.

In addition to keeping usage statistics, a set of user flag settings are stored. They allow you to indicate whether or not you want to use TERM-talk, appear in the user list, or receive TERM-ask calls. You can set or change your user flags at any time.

To see information about your PLATO use and flag settings, either press LAB from the user list options (refer to figure 4-25), or type "I" from the Author Mode display, or from the PLATO Facilities display "Choose a lesson to study". Press HELP for more information about these displays.

USING TIME-SAVING FEATURES

There are a number of PLATO time-saving conveniences. Many are called TERMS because the TERM key is used to access them. TERMS tell the time of day, perform mathematical calculations, allow you to comment on a lesson, or provide the correct spelling of a word. These TERMS are: TERM-time, TERM-calc, TERM-comment, and TERM-spell, respectively. (Refer to Checking the Time, Doing Mathematical Calculations, and Commenting on Lessons in section 2 to learn how to use TERM-time, TERM-calc, and TERM-comment.) The following paragraphs describe how to use TERM-spell.

TERM-spell

Authors and instructors can check the correct spelling of a word by using TERM-spell. TERM-spell asks you to type the word for which you need the correct spelling. You will see on the bottom on the display three words which are closest to that spelling. If none of these words match, you can see a list of words which precede or follow those displayed. To use TERM-spell, follow these steps.

1. Press TERM (hold SHIFT key down while pressing TERM/ANS key). You will see "What term? >>."
2. Type "spell" and press NEXT. You will see an arrow in the lower left corner of the display and the prompt "word: >".
3. Type the first few letters of the word for which you want the correct spelling and press NEXT. For example, if you need the correct spelling of the word "horizon," type "hori" and press NEXT. You will see three words from the PLATO listing which most closely match your entry on the bottom line of your display. Above these three words you will continue to see the word you entered.
4. If none of the words match, you can advance or reverse the list to see words preceding or following those displayed.
 - a. Press NEXT to advance the list to the three words which alphabetically follow the words displayed. Continue pressing NEXT to advance the list.
 - b. Press BACK to reverse the list and see the three words which alphabetically precede the words displayed. Continue pressing BACK to reverse the list.
5. Press SHIFT-BACK to leave TERM-spell and return to your previous activity.

USING DOCUMENTATION FEATURES

PLATO services include three features to help authors write and print text materials and create displays. These are Documentor, the Graphics Utility for Interactive Documentation Ease (GUIDE), and the print feature. Documentor allows users to write and store text. Documentor files, as well as other types of files, can be printed using the print request feature.

GUIDE allows users to create graphic displays quickly and easily without requiring the user to know the PLATO Author Language or the Micro PLATO Language.

The following paragraphs describe these features and how to use them.

Using Documentor

Documentor is a type of PLATO file used to organize, edit, and present text. It significantly reduces the amount of time required to write, review, and polish a document. Documents that change frequently can be kept current in a Documentor file with the latest version available to anyone with access to the file.

As an author or instructor, your account director must create the Documentor file for you (unless you have account director authority). Authors access Documentor from the Author Mode display. Type the name of your Documentor file and press NEXT. Type the security codeword (if required) and press NEXT. Instructors, "Choose a lesson to study" from the PLATO Facilities display, type the name of the Documentor file, and press NEXT. Enter the codeword if required.

After you enter the Documentor file, you will see the section index (figure 4-26). From the section index, you can create document sections as well as choose to read or edit these sections. Press HELP for instructions, and a complete list and description of Documentor options.

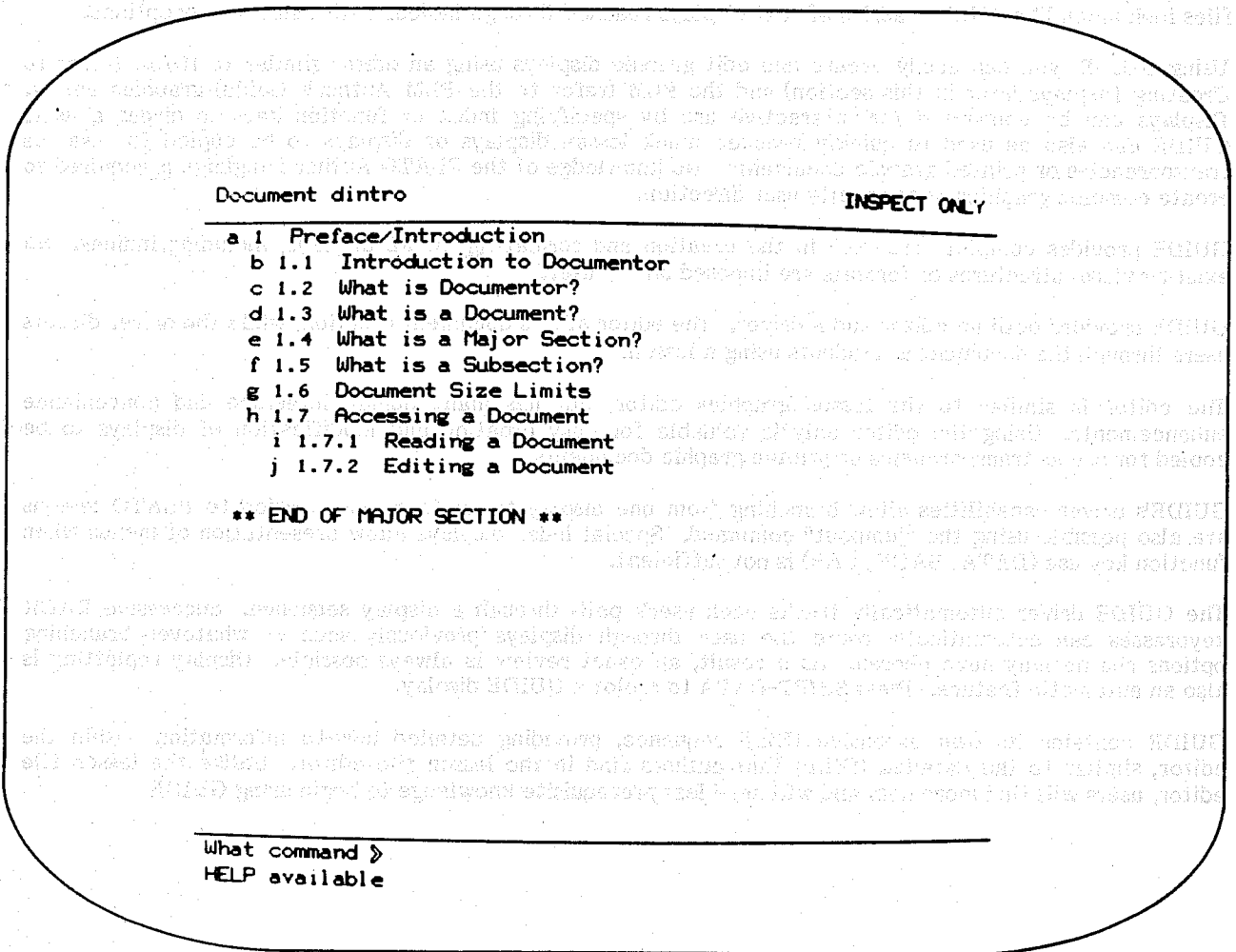


Figure 4-26. Documentor Section Index

Documentor editing directives are the same as Notes editing directives. Refer to Using the Notes Editor earlier in this section to learn more about editing directives. For more information on Documentor editing directives, press HELP while editing a section in a Documentor file.

Graphics Utility for Interactive Documentation Ease (GUIDE)

Authors and instructors can create and edit graphic displays using the Graphics Utility for Interactive Documentation Ease (GUIDE). GUIDE displays can be connected to work like a PLATO lesson. GUIDE files look much like AIDS: a series of text displays reached through indices with function key options.

Using GUIDE, you can easily create and edit graphic displays using an editor similar to ID/SD (refer to Creating Displays later in this section) and the PLM (refer to the PLM Author's Guide) graphics editor. Displays can be connected for interactive use by specifying index or function keys to direct a user. GUIDE can also be used to quickly produce mock lesson displays or displays to be copied for use as transparencies or printed graphic documents. No knowledge of the PLATO Author Language is required to create complex graphics or to specify user direction.

GUIDE provides complete freedom in the creation and formatting of all displays, including indices. No existing visual structures or formats are imposed on the user.

GUIDE provides both an editor and a driver. The editor allows document creation, while the driver directs users through the document as students using a lesson.

The editor is similar to the lesson graphics editor, but has many human interface and convenience enhancements. Using the editor only is valuable for easy creation and modification of displays to be copied for use as transparencies or printed graphic documents.

GUIDE's driver capabilities allow branching from one display to another. Connection to PLATO lessons are also possible using the "jumpout" command. Special index displays allow presentation of menus when function key use (DATA, BACK, LAB) is not sufficient.

The GUIDE driver automatically tracks each user's path through a display sequence. Successive BACK keypresses can automatically route the user through displays previously seen — whatever branching options she/he may have chosen. As a result, an exact review is always possible. Display replotting is also an automatic feature. Press SHIFT-DATA to replot a GUIDE display.

GUIDE contains its own extensive HELP sequence, providing detailed how-to information within the editor, similar to the detailed HELPs that authors find in the lesson file editor. Unlike the lesson file editor, users will find more help and will need less prerequisite knowledge to begin using GUIDE.

To use GUIDE you need a nameset with 20 character names and 64 word records. Create this nameset in your account, or ask your account director to create one for you. Set lesson "guide" as the processor lesson of a given nameset. Authors type "guide" on the Author Mode display, press DATA, and enter the name of a nameset. Instructors "Choose a Lesson to Study" on the PLATO Facilities display, and, at the "What lesson" arrow, enter "guide" and press NEXT.

GUIDE allows typeable, account, and group codewords. Setting lesson "guide" as the processor lesson is recommended when using account and group codewords; in such cases, "Special read/write access" must be set.

Authors and instructors wanting to use GUIDE will need a basic familiarity with screen layout and positions (refer to Screen Locations later in this section).

For more information on GUIDE and to learn how to use it, study the PLATO on-line lesson "guideaids" (type "guideaids" on the Author Mode display and press DATA or select the "Choose a lesson to study" option on the PLATO Facilities display and type "guideaids").

Requesting Prints

The print feature allows you to request file prints from the PLATO service center or to print a file or make copies of displays on the terminal screen using a printer attached to your terminal. To request prints from the service center, your account must contract to use the print feature and your author or instructor options (refer to figure 4-1, option b) must be set to YES. No contractual agreements are necessary for prints made at your terminal.

NOTE

PLATO service centers refer to locations offering PLATO services to Control Data customers in the United States. PLATO services on systems not operated by Control Data may not include print requests from the computer center.

The following paragraphs describe how to request prints from the PLATO service center and make prints with a printer attached to your terminal.

To request a print from the PLATO service center:

1. Do one of the following steps, depending upon your user type.

- From the Author Mode display (for authors), either type "prints" and press DATA, or press SHIFT and type "R".
- From the PLATO Facilities display (for instructors), choose to "Request a print".

You will see the Print Requests display (figure 4-27).

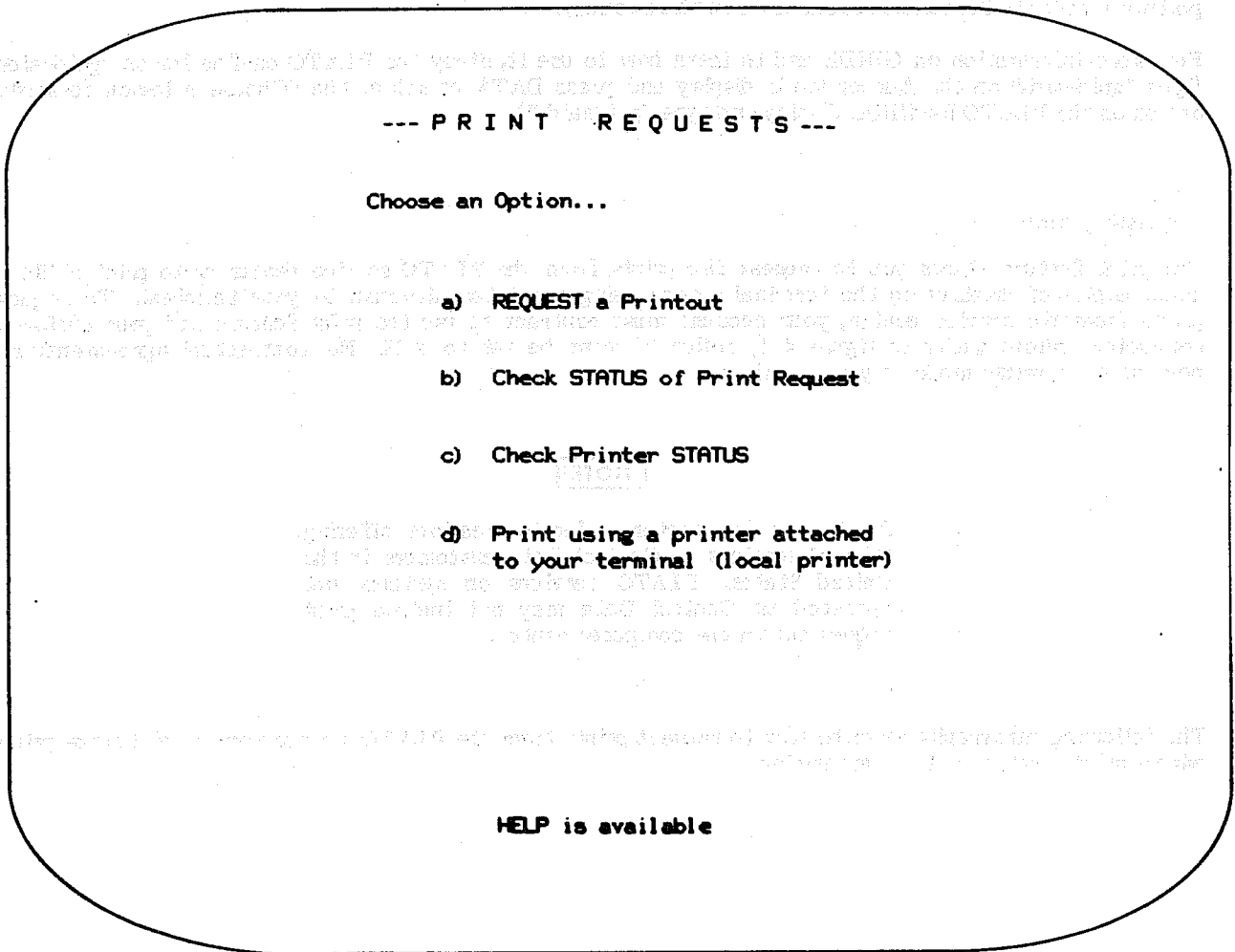


Figure 4-27. Print Requests

2. Choose "Request a printout" by typing the letter in front of it. You will be asked what file you want printed.
3. Type the name of the file and press NEXT. You may be asked for the security code of the file.

4. Type the security code (if required) and press NEXT. You will see the print selection display. It allows you to choose the sections of your file you want printed. You can print the entire file, including the title page, outline, and text (if printing a Documentor file), or choose any combination of these and selected sections of the file. Follow the instructions on the display. Press SHIFT-NEXT when finished.
5. Type your name and mailing address. Press SHIFT-NEXT when finished. You will see a message telling you when the file will be printed.

To check the status of an existing print request.

1. Choose "Check status of print request" from figure 4-27.
2. Type the name of the file on which you want a status report and press NEXT.
3. You will see a message stating whether or not the print has been made. You will also see an option to cancel a request if the file has not been printed yet.

You can also check the current availability of the service center printer by choosing the "Check printer status" option from the print requests display.

To make a print using a printer connected to your terminal:

1. Do one of the following steps, depending upon your user type.
 - From the Author Mode display, type "print" and press DATA.
 - From the PLATO Facilities display, "Choose a lesson to study", type "print", and press DATA.

NOTE

Authors and instructors can also make prints by choosing to "Print using a printer attached to your terminal" from the print requests display (figure 4-27).

2. Do one of the following steps, depending upon the type of print you want.
 - To print an entire file, choose to "Print a file using a printer attached to your terminal", and respond to each of the questions you are asked.
 - To copy a screen display using an IST-I or II, choose to "Make copies of the screen using a printer attached to your terminal". You will see screen copy options. Choose the one corresponding to the kind of printer you have, then follow the prompts. A short program will be copied into your terminal memory. You will see a message when the program has been copied ("loaded") and you can begin making screen copies.

Then leave lesson "print" and go to any display you want to copy. Press the PRINT button on the printer to copy a display.

- To copy a screen display using an IST-III or Viking terminal, press SHIFT-PRINT at any time. You need not use lesson "print" to copy displays with a printer attached to these terminals.

WRITING PLATO LESSONS

PLATO lessons are written using Control Data terminals connected to a CYBER computer and a PLATO authoring language. PLATO lessons can be delivered to students using the same computer and communications network, other CYBER computers delivering PLATO services, and Control Data micro computers.

Two languages are available to PLATO authors. The PLATO Author Language is used to write lessons delivered on terminals communicating with a CYBER system. The Micro PLATO Language is used to write lessons used on both a terminal communicating with a CYBER system and a Control Data micro computer. The two languages are very similar; many commands exist in both languages. The PLATO Author Language and the Micro PLATO Language are overlapping sets. Several hundred commands exist in both languages. Commands unique to network or flexible disk delivery are available in only one language. Detailed information about both languages is available in AIDS. (On the Author Mode display, type "AIDS" and press NEXT. From the index you can choose to see functional and alphabetical lists of PLATO Author Language commands. Press DATA and type Micro PLATO Language for an index of related subjects.)

The following discussion introduces the basics of PLATO authoring including: using lesson files; file security; the PLATO editor; creating lesson displays; and designing, testing, and preparing lessons for publication. All information in this section is useful to authors using both the PLATO and Micro PLATO languages. Authors writing lessons for flexible disk delivery should also read Preparing Lessons for Microcomputer Users later in this section.

USING THE LESSON FILE

Authors writing in both the PLATO Author Language and the Micro PLATO Language use lesson files (refer to Understanding File Structure and Use earlier in this section).

Lesson files are created in an account by an account owner or director, or by an author authorized to create files. To obtain a lesson, contact an account director or create a file in your account following the instructions in Creating Files in section 5. Lesson files have varying sizes. Small files (1 part) can be created initially and expanded as more space is needed.

Your lesson file will have a directory (refer to figure 4-5a) containing information about the file (author, related files, security codes) and an index (refer to figure 4-4a) listing subsections to help you find information easily). The index will divide your file into parts. Each part is an index of seven blocks. Each block holds up to 320 computer words of information. Although there are several kinds of blocks (to hold different kinds of information your lesson will use), all blocks are the same size. Each lesson part lists only 7 blocks.

The following paragraphs introduce you to the structure of lesson files and their uses, as well as providing instructions for writing PLATO lessons.

Registering Author and Lesson Information

Each lesson file has a directory in which you may register information about yourself and your lesson (refer to figure 4-28). Completing all entries on this display prevents your file from being inadvertently destroyed by your account director during a routine file cleanup. If you are uncertain about the kind of information to include in the one-line description of the "Lesson information" section, simply indicate the purpose of the file. To enter information on this display, type the number in front of an entry, type your information, and press NEXT.

```
Lesson name ---- english
Account ----- mktgrps

Press the associated number to change an entry.

Author Information:
1. Name ----- sue busch
2. Dept./Affiliation -- communications
3. Telephone number --- 555-8273

Lesson Information:
4. Subject Matter ---- poetry
5. Intended Audience -- 5th graders
6. One line description -----
second semester
```

Figure 4-28. Author and Lesson Information
You may register information about yourself and your lesson on this display.

After completing the information on the display, press BACK twice to return to the block listing display (figure 4-29). To reach figure 4-28 from the block listing, press DATA or choose the "directory" option.

```
Document dintro                                INSPECT ONLY
-----
1 Preface/Introduction
3 Creating a Document/Accounts
4 Major Section/Subsection Indexes
5 Editing Document Text
6 Document Directory
7 Reading a Document
8 Printing a Document
9 Interfacing with Other Lessons
10 Glossary of Terms
11 Documentor Quick Reference Guide
88 Version 1 of Documentor

** END OF DOCUMENT **

What command >
HELP available
```

Figure 4-29. Block Listing
You will be brought to this display each time you enter a file.

Assigning Security Codewords

You can protect your file from unauthorized use by assigning security codewords. Security codewords control which users can see or change the contents of the file. As an author, it is your responsibility to create and set codewords for your files. Codewords are similar to passwords; they control which users can see or change the code in the lesson file. Codewords can allow specific users or specific user types access to the file. Examples of the different types of security codes you can set are:

Typed code	Requires all users to type the file's security codeword to see and/or change the contents of the file.
Group code	Allows all authors within the group to see and/or change the contents of the file without typing the codeword first.
Account code	Allows all authors whose groups are listed within the named account to see and/or change the contents of the file without typing a codeword first.
Unmatchable code	No security code of any sort can match this; no access is possible. This codeword is automatically assigned to newly created files for all codes other than the change and inspect codewords. These security codes are assigned to prevent accidental accesses to databases before authors have had an opportunity to assign appropriate security controls. An author or account director can assign unmatchable codes to any codeword of any file; this would prevent any author from making any changes to that file. If used for the common code of a lesson, that lesson and only that lesson can connect to commons and leslists stored within that file. (Refer to Using Other Block Types later in this section for more information on common blocks.)

It is important to be creative when assigning codewords. If you use a typed code, be sure it is something no one can guess. Do not use obvious codes like your spouse's name; the name of your group, account, or file; your pet's name; your telephone number; a period; a, b, c, and so on. Choose something with which only you can identify. Don't use your password. A file codeword is a second level of security. Choose and use another code. Change your typed codewords frequently to prevent the possibility of someone guessing them. Examples of good codewords are misspelled words of at least seven characters, or words which have numbers inserted in them.

If you use a group or account code, file access is limited only to people in your group or account. Although this limits the number of people who can access your file, it makes your sign-on password extremely important because access to the file is based on who you are rather than what you know. Protect your sign-on password by making sure it is a creative password which no one can guess. Remember, do not use obvious passwords which are familiar to anyone, and change your password frequently.

Each lesson contains a display that allows you to register and store security information (refer to figure 4-30). When a lesson file is created, this may be blank. Account owners may choose to assign default codewords in their accounts. Default codewords are placed automatically on all files created within an account. They provide a limited security level because they are placed on all files. Evaluate the default codes on new files to assure each file has a security level matching its use. Evaluate or change the codewords on the display as soon as the file is created. The following steps describe how to reach this display and assign codewords in the lesson file.

1. From the Author Mode, type the name of your lesson file and press NEXT. You will see figure 4-29. (This means some author information, and possibly account or group security codes, have already been entered in the file's directory.)
 - a. Press DATA.
 - b. Choose the "Codewords" option. If no security codes exist ("Blank - open to all"), immediately assign codewords. If general security codes, such as account or group codes, have been assigned, consider their appropriateness for the file. Ask yourself whether or not such a large group of authors should be able to change or inspect the file.

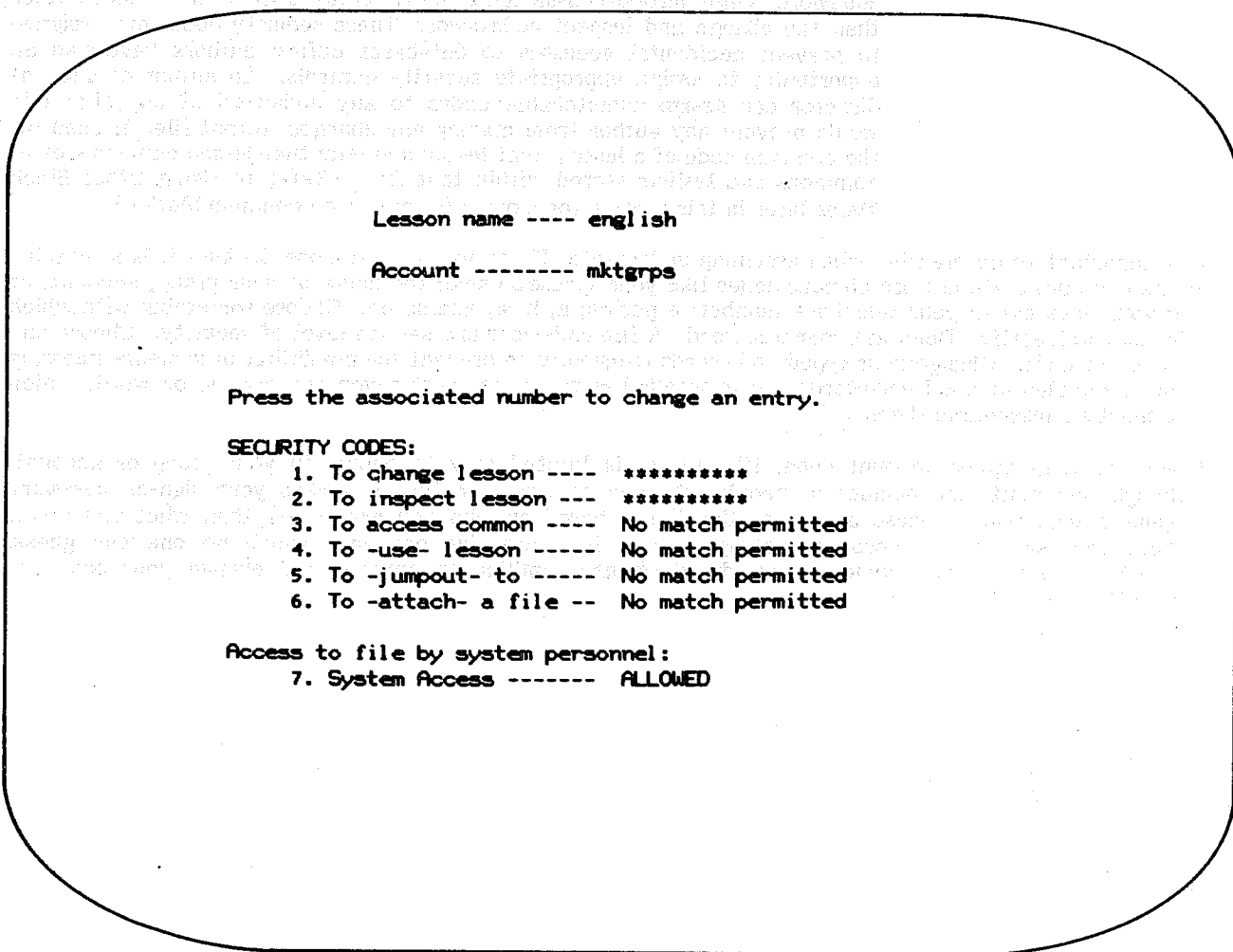


Figure 4-30. Security Codes
This display allows you to set security codewords for a lesson file.

2. To assign security codewords, do any of the following.

- "To change lesson" determines which users or group of users can change (edit) your lesson code. To choose this option, type the number in front of it. Do one of the following steps, depending upon the type of access you want.
 - a. To restrict access to yourself only or to a small group of people who know the codeword, type a codeword and press NEXT. A random number of X's appear to the right of the arrow as you type. You will be asked to retype the codeword to verify it and help you remember it. Press NEXT.
 - b. To restrict access to all authors in your group, press LAB. You will see a "group" and an "account" option. Type the number in front of the "group" option.
 - c. To restrict access to all authors in your account, press LAB. You will see a "group" and an "account" option. Type the number in front of the "account" option.
 - d. To restrict all access, press LAB. Type the number in front of the "unmatchable code" option.
- "To inspect lesson" determines which users or group of users can read but not change your lesson code. To choose this option, type the number in front of it. Follow instructions a through d in step 2 for assigning codewords.
- "To access common" controls access to any common block of this or another lesson file by the code written in this lesson. The security codewords for "access common" must match in files containing the code requesting access and the common blocks. To choose this option, type the number in front of it. Follow instructions a through d in step 2 for assigning codewords. This option also controls access to leslist blocks.
- "To 'use' lesson" controls use of the code contained in another lesson file. The "use" lesson codewords for the files must match. To choose this option, type the number in front of it. Follow instructions a through d in step 2.
- "To 'jumpout' to" (another file) controls which lessons can be reached automatically from your lesson as well as what lessons can automatically reach your lesson. To do this, the "jumpout" codewords for both files must match. To choose this option, type the number in front of it and follow the instructions a through d in step 2.
- "To 'attach' to a file" allows you to manipulate or change information in one file by executing code residing in another file. To do this, the codewords for the files must match. To choose this option, type the number in front of the option and follow the instructions a through d in step 2.
- "System access" controls system personnel access to your lesson file. System personnel (users responsible for PLATO services) occasionally need access to files to check for errors if hardware problems occur. Authorized system personnel can access the file in inspect mode, without typing a security code. Type the number in front of this option to change it.

EDITING LESSON FILES

Before you enter code into your lesson, you must learn to create a block in which to write your code, and use the PLATO editor to enter and edit code. The following paragraphs describe how to create a block, how to use the PLATO editor, and how to get editing help when you need it.

Creating a Block

The TUTOR block is the part of the lesson file in which you write code. Each part of a lesson file contains space for you to create seven blocks. Each block stores 320 computer words or approximately 50 lines of code.

The following steps describe how to create a TUTOR block.

1. From the Author Mode display, type the name of your lesson and press NEXT. You may be asked to type the file security code.
2. Type the security codeword (if required) and press NEXT. You will see a block listing display (refer to figure 4-29). Notice that the display lists only one block (a directory). The block directory contains author and lesson information, file security information, and associated files and editing specifications. This is the only block that is not used for lesson code. The block directory is reached by typing "a" or pressing DATA from the block listing display.
3. Create a block for writing and storing lesson code by typing the capital letter of the block preceding the block you want to create. To create your first block, type "A" since block "a" precedes the block you want to create. You will see block creation options (refer to figure 4-31).
4. Create a TUTOR block for code by pressing NEXT. You will be asked to name the block you created.
5. Type a name for your block and press NEXT. If you are unsure of what to title your block, use test, workspace, or another name that indicates the purpose or subject of the block. You will see your block.
6. Do one of the following steps.
 - If you are familiar with the PLATO languages and editing directives, and are prepared to enter lesson code, enter your code.
 - If you are unfamiliar with the PLATO languages and editing directives, or are not prepared to enter lesson code at this time, type "i" and press NEXT. Type an asterisk at the arrow and press BACK.

NOTE

You must type something in a new block or the block will be deleted from the block listing display. This is the reason for the asterisk.

After you have typed something in your block and pressed BACK twice, a display similar to figure 4-29 appears. Two asterisks will indicate the last block you edited before returning to the display.

Press...

NEXT for a normal TUTOR block

LAB for copy-a-block

>

- 1 for a common block
- 2 for a charset block
- 3 for a micro block
- 4 for a leslist block
- 5 for a vocabulary block
- 6 for a lineset block
- 7 for a listing block
- 8 for a text block
- 9 for an access list block

Figure 4-31. Block Creation Options
Several kinds of blocks can be created from this display.

Using the PLATO Editor

The PLATO editor allows you to insert and change the code you write. It allows you to enter, revise, read, and move your lesson code. The editor also tells you how much space is available in each block.

The editing directives used in the PLATO lesson editor (shown in table 4-1) are the same as those used in the Documentor and notes editors. (Refer to Using the Notes Editor earlier in this section and to Requesting Editing Help later in this section for additional information.)

NOTE

Lessons that were written before February of 1983 may not have all of the editing capabilities that are now available. To change those lessons, the "use" commands in the lesson must be changed as follows:

<u>Old Format</u>		<u>New Format</u>	
use	edit	use	edit2
use	edhelp	use	edhelp2

Table 4-1. Editing Directives

Directive	Meaning
S	Save
D	Delete
I	Insert
R	Replace
A	Append
DS	Delete, after saving
DA	Delete, after appending
IS	Insert saved text or code

Figure 4-32 depicts the PLATO editor, ready to receive an editing directive. After typing a directive and pressing NEXT, an arrow will appear below the line (refer to figure 4-33). Below the line, the arrow allows you to enter new or correct existing text. Pressing BACK returns the arrow above the line (refer to figure 4-32), where you can enter a new editing directive or press BACK to leave the block.

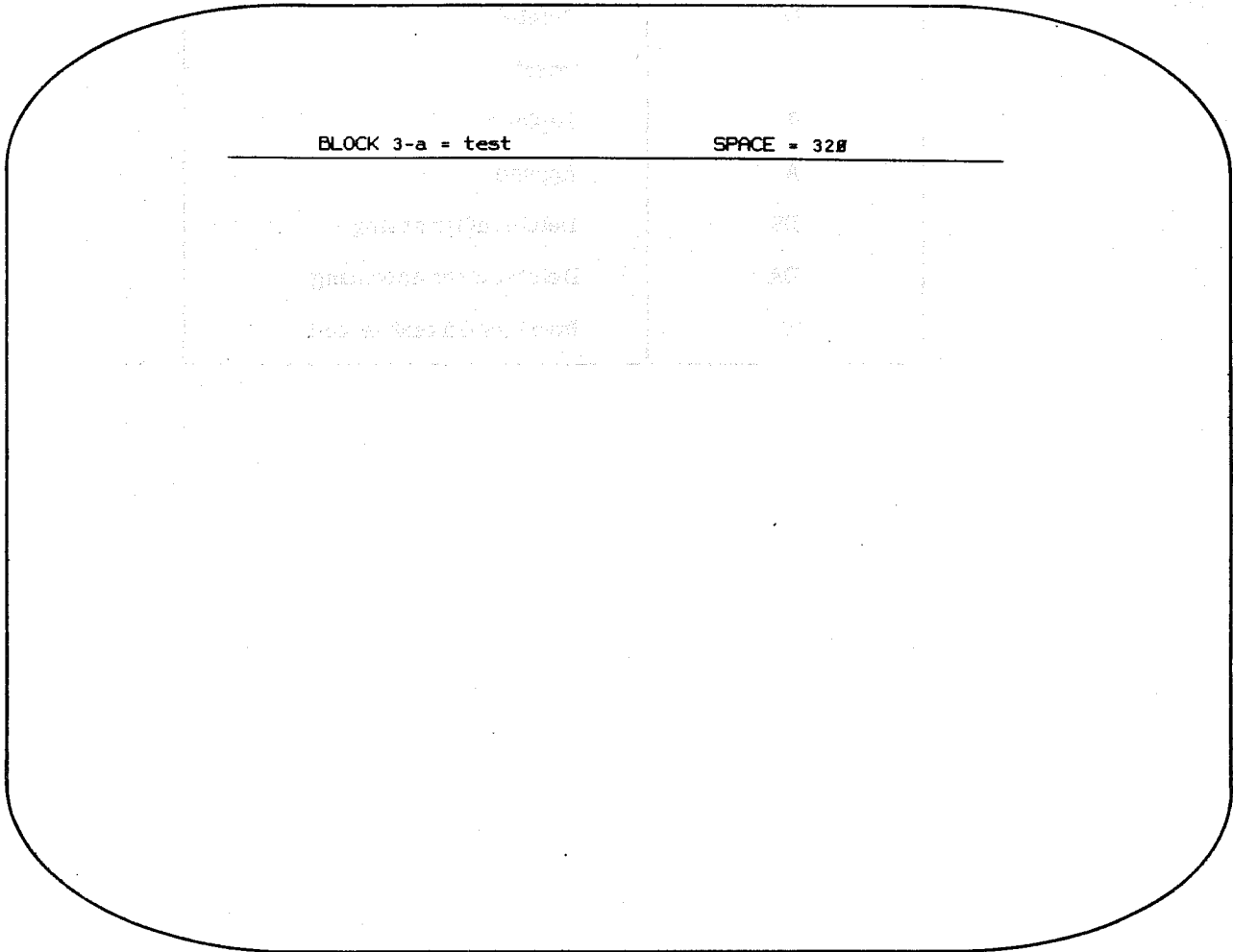


Figure 4-32. The PLATO Editor

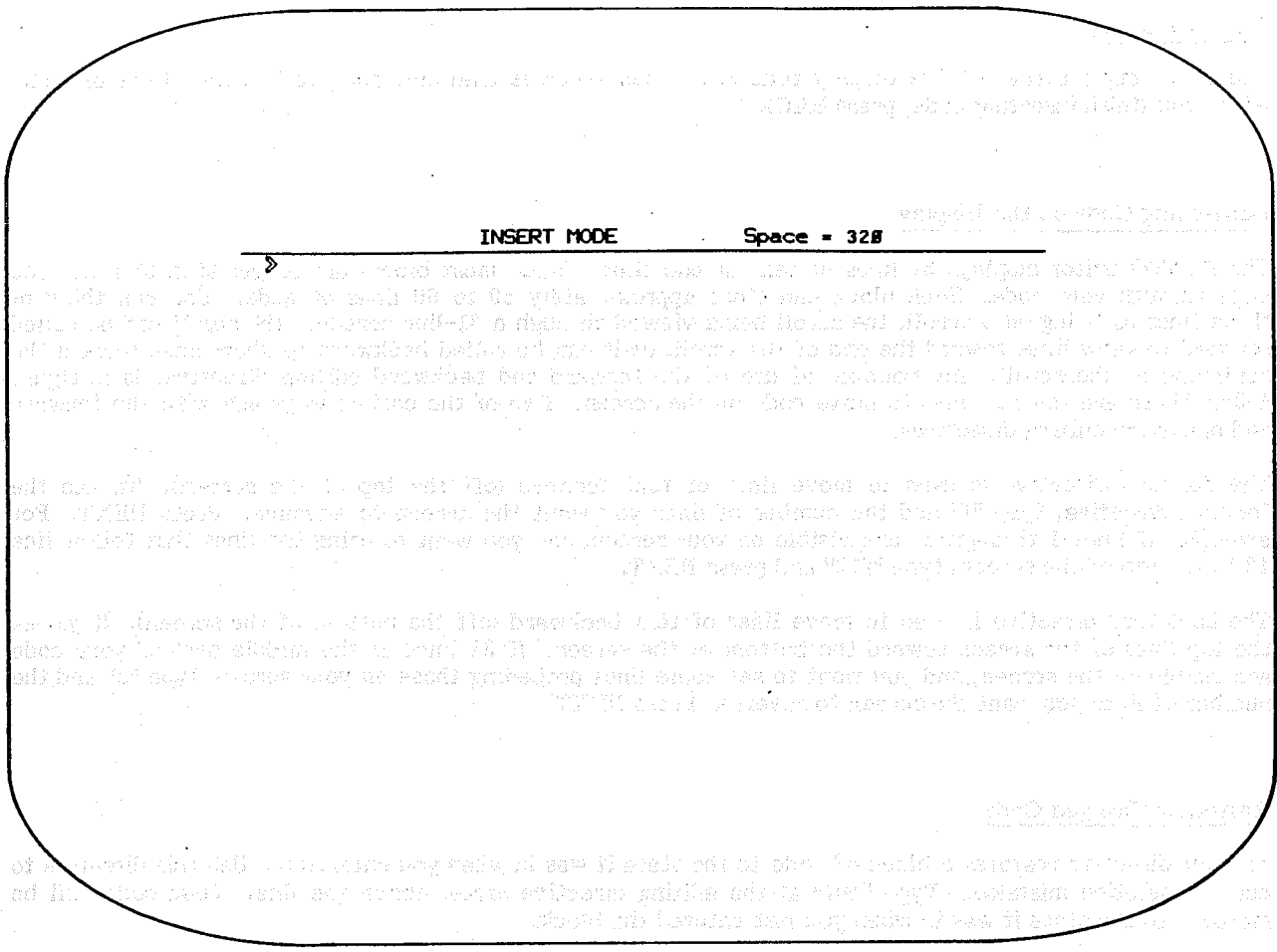


Figure 4-33. Inserting or Changing Text
When you see the arrow below the line, you can enter new or change existing text or code.

Inserting Code

The upper right corner of the display tells how much space is available for you to insert lines of code. After you finish inserting code, press BACK.

Positioning Code on the Display

The PLATO editor displays 31 lines of text at one time. Since most blocks are longer than 31 lines, you page through your code. Each block can store approximately 50 to 60 lines of code. You can think of these lines as being on a scroll, the scroll being viewed through a 31-line screen. The scroll can be rolled forward to show lines toward the end of the scroll, or it can be rolled backward to show lines toward the beginning of the scroll. An example of use of the forward and backward editing directives is in figure 4-34. There are several ways to move code on the screen. Two of the easiest ways are with the forward and backward editing directives.

The forward directive is used to move lines of text forward (off the top of the screen). To use the forward directive, type "f" and the number of lines you want the screen to advance. Press NEXT. For example, if lines 1 through 31 are visible on your screen, and you want to bring the lines that follow line 12 to the top of the screen, type "f12" and press NEXT.

The backward directive is used to move lines of text backward (off the bottom of the screen). It moves the top lines of the screen toward the bottom of the screen. If 31 lines of the middle part of your code are visible on the screen, and you want to see some lines preceding those on your screen, type "b" and the number of lines you want the screen to reverse. Press NEXT.

Restoring Changed Code

The out directive restores a block of code to the state it was in when you entered it. Use this directive to correct deletion mistakes. Type "out" at the editing directive arrow above the line. Your code will be restored to the state it was in when you last entered the block.

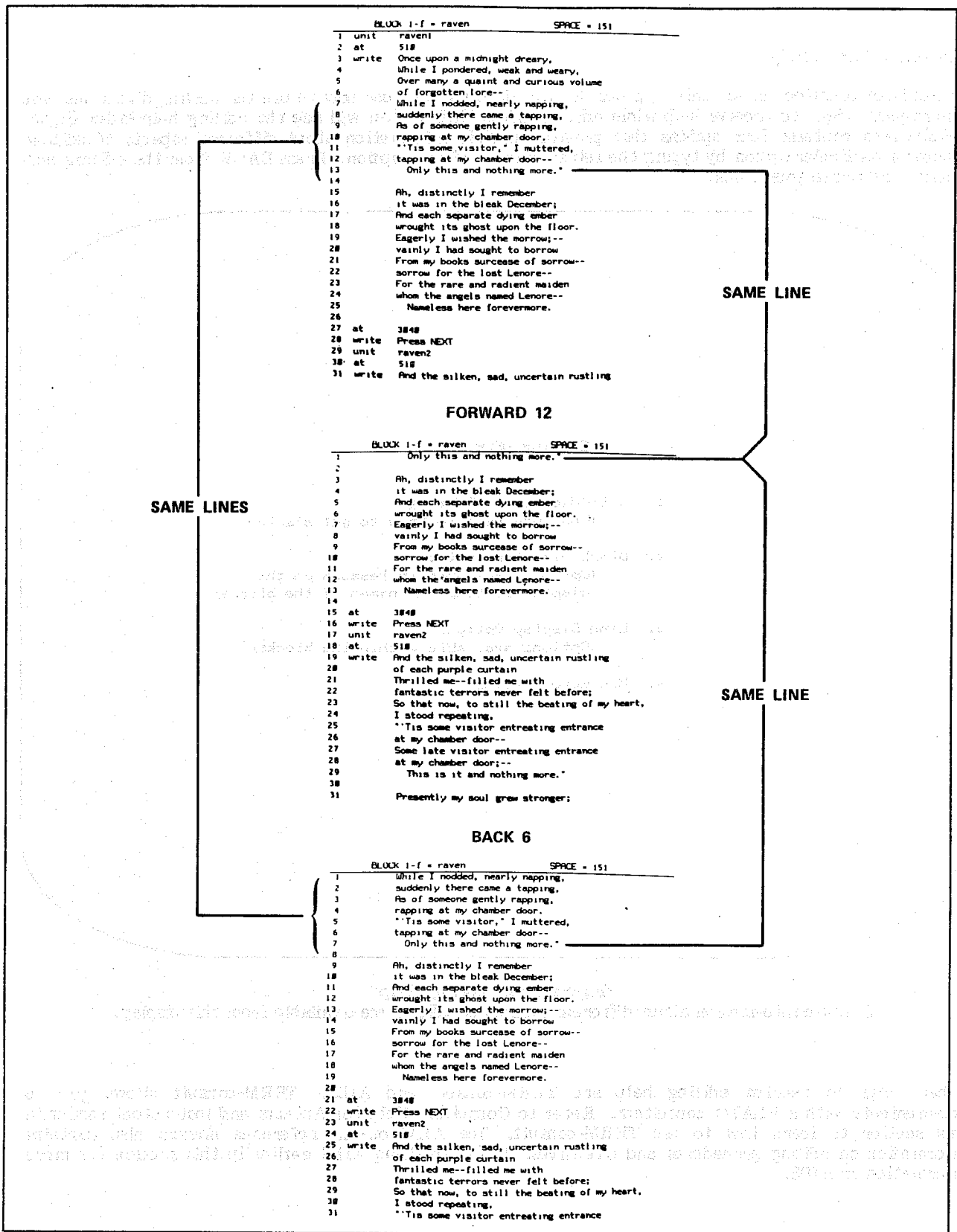


Figure 4-34. Moving Forward and Backward

Requesting Editing Help

If you have questions about editing procedures or do not remember how to use the editing directives, you can request help. To receive help while editing, press HELP. You will see the editing help index (figure 4-35) which contains four options that provide specific information about different aspects of editing. Choose a particular option by typing the letter in front of that option. Press BACK from the editing help index to return to your block.

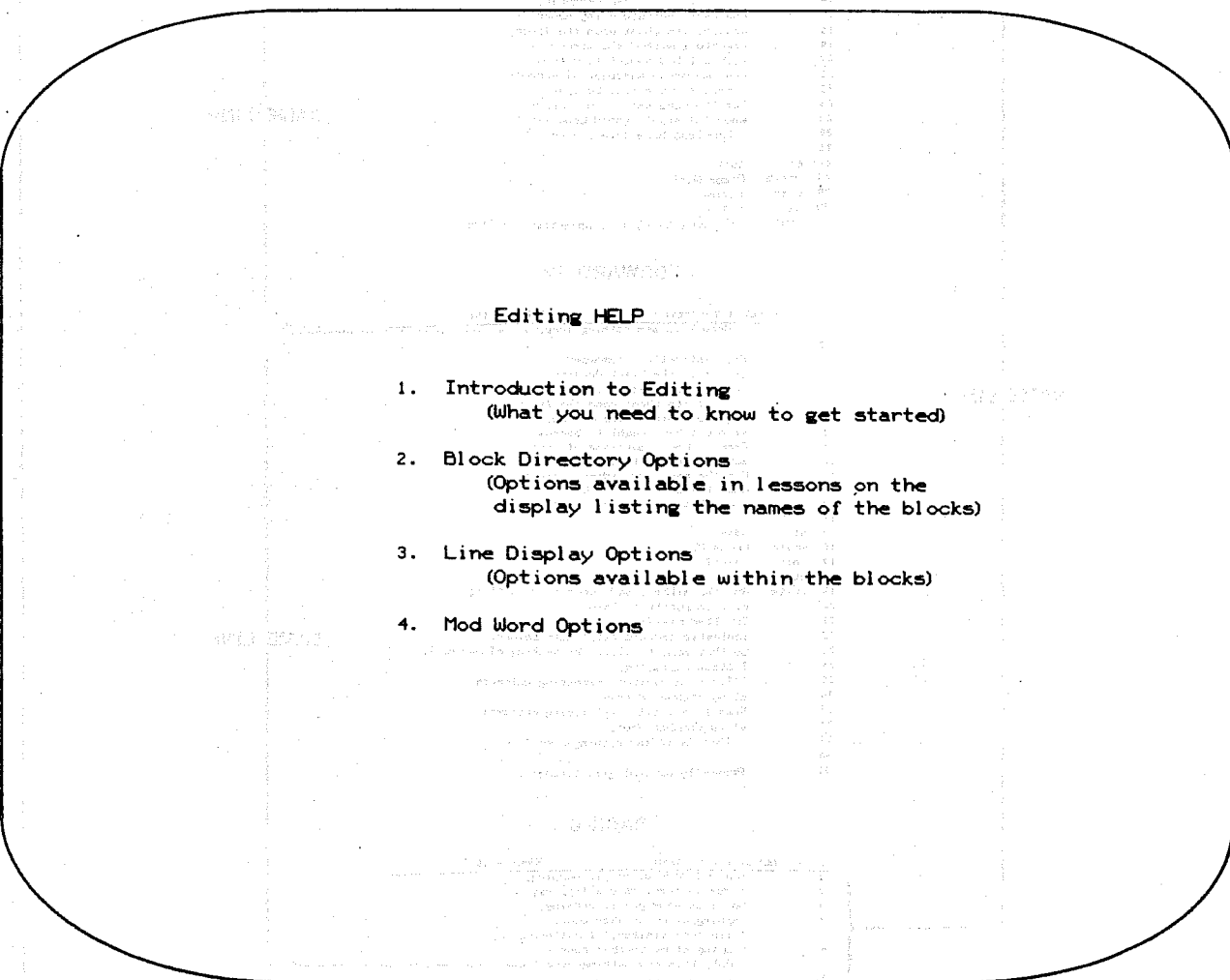


Figure 4-35. Editing Help

Specific information about different aspects of editing are available from this display.

Other ways to receive editing help are TERM-consult and AIDS. TERM-consult allows you to communicate with a PLATO consultant. Refer to Consulting Help for Authors and Instructors earlier in this section to learn how to use TERM-consult. The AIDS on-line reference manual also contains information on editing procedures and directives. Refer to Using AIDS earlier in this section for more information on AIDS.

Quick Reference AIDS

If you are editing a lesson file and have a question about either a PLATO Author Language or Micro PLATO Language command, you can see a short summary of the command by using the AIDS quick reference feature. Quick Reference AIDS gives summary of PLATO language commands on the same display as your lesson code. Quick Reference AIDS is usually used as a memory refresher on the order of tags in a command or the kind of delimiters used between tags.

Quick Reference AIDS is reached from any lesson file. The following steps describe how to access Quick Reference AIDS.

1. From your lesson block (refer to figure 4-32) at the editing directive arrow, type "q" and the name of a command to see a summary. (Type "qwrite" and press NEXT to see a summary of the "write" command.)
2. To see a detailed AIDS explanation of a specific command, type "q" and the name of the command on which you want information. Press SHIFT-NEXT. (Type "qwrite" and press SHIFT-NEXT to see the detailed information in AIDS on the "write" command.)
3. To request information on a specific command or feature from AIDS, type "q" and press NEXT. You will be taken to the AIDS "What PLATO feature" arrow in figure 4-8.

CONDENSING A LESSON

CYBER systems use two major types of data storage: disk storage and extended memory. Disk storage is less expensive and can hold more data than extended memory, but requires more time to access information. Therefore, disk storage is used for long-term storage, while extended memory is used for short-term storage. Extended memory is used to store lessons that are being executed (used). (Refer to Understanding Extended Memory Usage and Charges later in this section.)

Disk storage holds more data than extended memory because there is usually considerably more disk space available. Extended memory, however, is required for all lessons being used. There are constraints on the amount of extended memory that can be used by a lesson. Some constraints are absolute and cannot be exceeded. This absolute limit is the maximum allowed binary size of a lesson, currently 15,000 computer words. Each system has its own set of guidelines for determining how much extended memory is considered a fair share for a lesson. Contact your account director or a PLATO consultant to learn what the extended memory limits and fair share guidelines are for your system.

Lesson code is always stored on disk. When you edit your lesson, a copy of the specific block you are editing is brought into extended memory. The original block is left on disk. When you indicate you are finished editing the block (by pressing BACK and returning to the block listing), the updated copy of the block replaces the original on disk. You should update your code frequently while editing to reduce the possibility of losing some of your code due to system problems, such as a power failure.

When you or a student use your lesson, two copies of the code in your lesson block are made. Both copies are condensed into binary code which is shorter and easier for the system to read. One copy of the lesson binary is stored on disk and the other copy is put into extended memory and remains there as long as someone is using the lesson or longer, depending upon how much extended memory is available. Since the original code remains on disk, you can edit a lesson at the same time it is being used by a student. The changes you make, however, will not be seen by students until the binary code stored in extended memory is deleted. When a new student requests the lesson, or you press SHIFT-STOP from the block listing, the updated copy is brought into extended memory.

If, while editing a lesson, you want to execute it while an old copy still resides in extended memory, you have two choices. You can either execute the old copy, or you can recondense the lesson and execute the recent changes. To execute the old copy in extended memory, press SHIFT-LAB from either the block listing display or the line display. To recondense the lesson, and see the changes, press SHIFT-STOP from either the block listing display or the line display. If a student is using your lesson when you condense it, you will have the options to see which students are using your lesson, inspect your lesson without condensing it, return to editing your lesson, or condense your lesson (automatically removing the students from the lesson).

When you condense a lesson, a binary of your code is made and inspected. If you made a mistake resulting in a line of code the system cannot interpret, you will see a condense error message. A condense error message tells you how many uninterpretable lines exist, the names of the units in that are located, and the kinds of errors made. From the condense error message, you can see detailed information about each of the errors and be taken directly to the errors to correct them. Correct all condense errors then recondense the lesson to make sure your changes are correct.

To condense a lesson, press SHIFT-STOP from the line display or the block listing display.

CREATING DISPLAYS

The following paragraphs orient you to display preparation and describe how to create graphic displays to use in PLATO lessons.

Screen Locations

The PLATO languages include many commands to create pictures, animated sequences, and text. Most of these commands require you to specify where you want a word, line, circle or other character to appear on the terminal screen.

There are two ways to specify screen position: coarse grid and fine grid. Coarse grid divides the screen into 32 lines vertically and 64 characters horizontally (refer to figure 4-36).

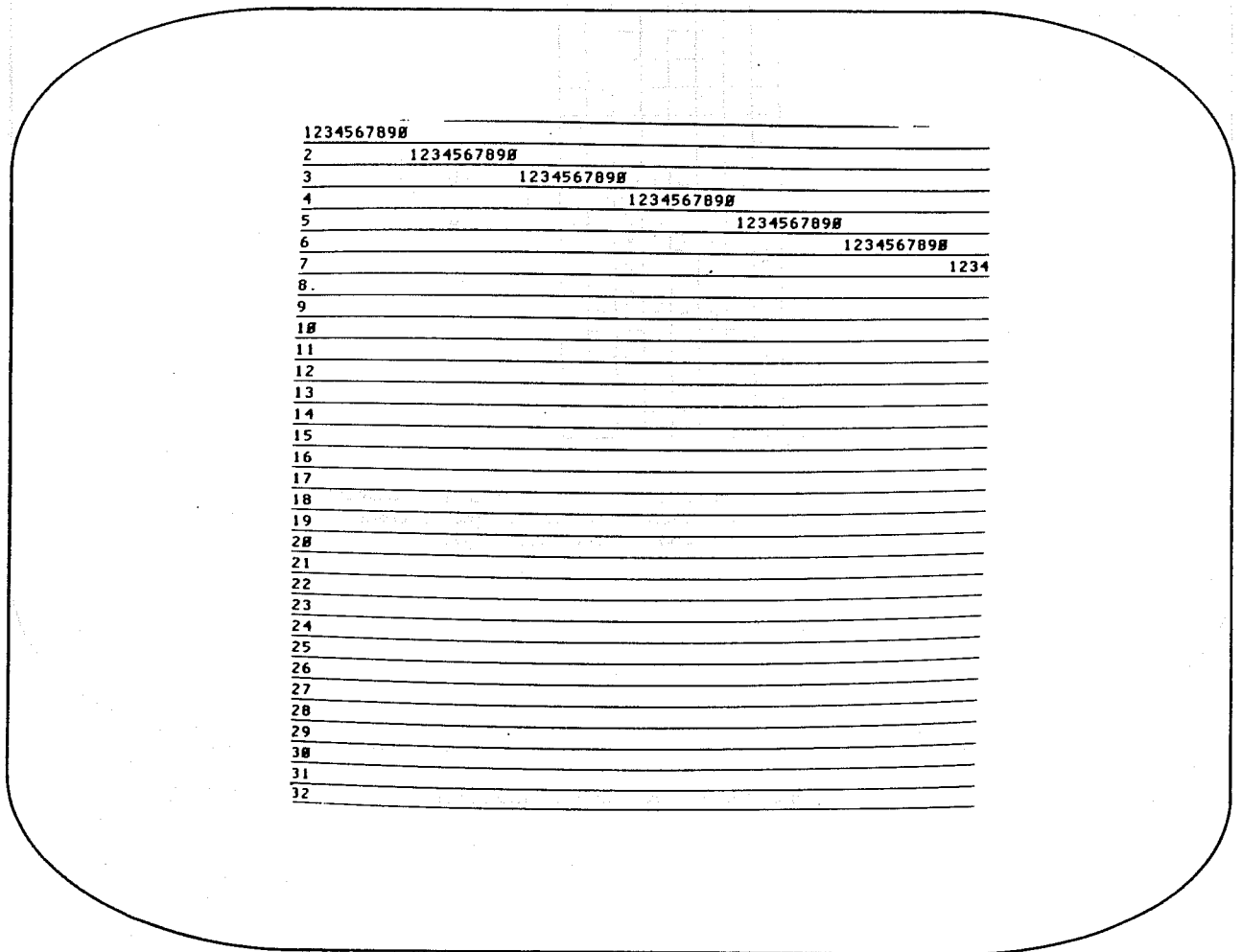


Figure 4-36. Coarse Grid
The coarse grid is composed of 32 lines of 64 characters each.
Each character is a standard size, 8 dots wide by 16 dots high.

The lines are numbered from top to bottom beginning with line 1. The spaces are numbered from left to right beginning with number 1. Positions on the coarse grid screen are identified by a three- or four-digit number. The first one or two digits specify the line number and the last two digits specify the character position. Position 214 represents line 2, character 14; position 1603 represents line 16, character 3. Each coarse grid character is an 8-dot wide by 16-dot high matrix. Within these spaces, letters and parts of graphics are drawn by lighting different dots in each space. An example of how letters occupy 8 X 16 dot characters is shown in figure 4-37.

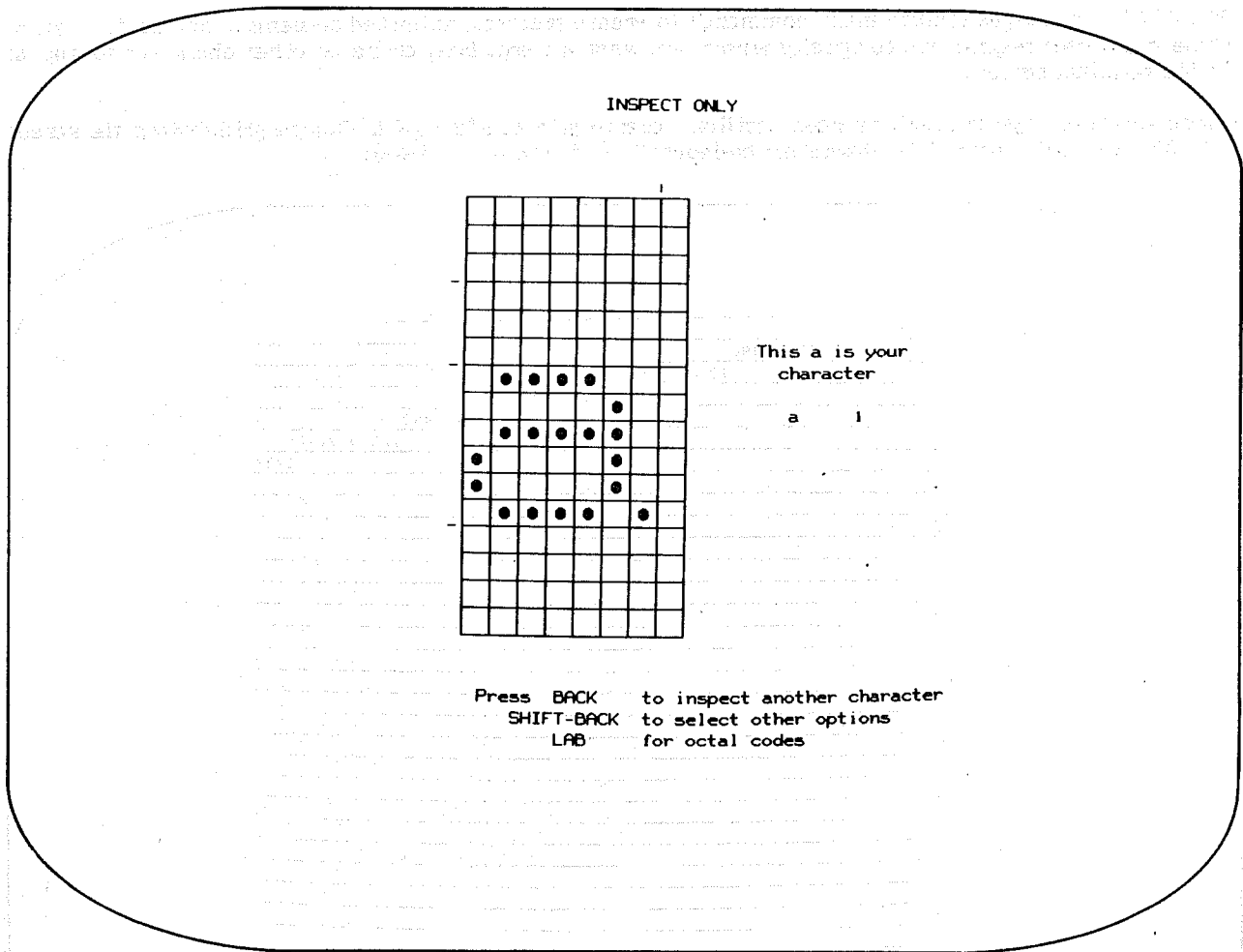


Figure 4-37. A PLATO Character

Fine grid divides the screen into a 512-by-512-dot matrix (figure 4-38). When using the fine grid coordinates, think of the screen as the first quadrant formed by x and y axes. The bottom of the screen is the x coordinate. The left side of the screen is the y coordinate. The lower left corner of the screen is 0,0. Each position on the fine grid is identified by a pair of coordinates separated by a comma. The first number is the x coordinate and indicates the number of dots from the left edge of the screen. The second number is the y coordinate and indicates the number of dots from the bottom of the screen. For example, position 240,125 represents the dot that is 240 dots from the left of the screen and 125 dots from the bottom of the screen. Some PLATO language commands use the x and y axes to locate screen positions.

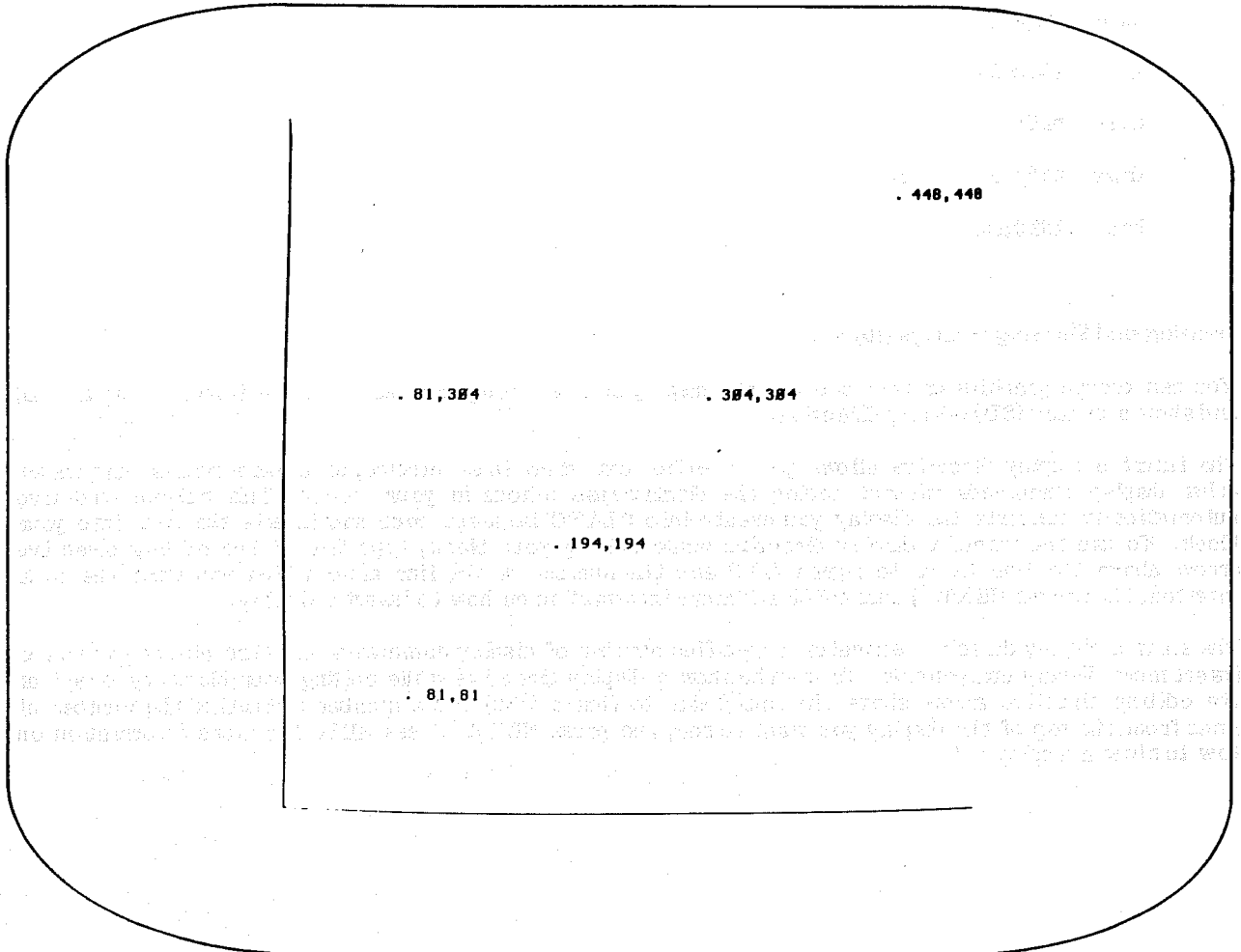


Figure 4-38. Fine Grid
 The fine grid is a quadrant with an x and a y axis. Each axis has 512 dots.
 Each screen position has an x and a y coordinate.

The following sample code allows you to create a display using text, a line and a box using fine and coarse grid coordinates.

To use this code, go to your lesson file and create a block (refer to Creating a Block earlier in this section). Type "i" and press NEXT for insert mode and type the following code. After typing each command ("unit", "at", "write", "draw", "box") press the TAB key. Then enter the information (tags) in the right column. Press BACK when finished and then press SHIFT-STOP to condense your lesson and see the display.

```
unit  display
at      232,280
write  hello
draw   232,280;272,280
box    132 9;153 6;2
```

Inserting and Showing Displays (ID/SD)

You can create graphics or text and see the display as it is being created using the insert a display (ID) and show a display (SD) editing directives.

The insert a display directive allows you to write text; draw lines, circles, or broken circles; and insert other display commands without coding the display instructions in your lesson. This editing directive automatically converts the display you create into PLATO language code and inserts the code into your block. To use the insert a display directive while editing your block, type "id" at the editing directive arrow above the line (refer to figure 4-32) and the number of the line after which you want the code inserted, then press NEXT. Press HELP for more information on how to insert a display.

The show a display directive executes a specified number of display commands and then allows you to the insert more display components. To use the show a display directive while editing your block, type "sd" at the editing directive arrow above the line (refer to figure 4-32) and a number indicating the number of lines from the top of the display you want to see, and press NEXT. Press HELP for more information on how to show a display.

Creating Characters and Line Drawings

As an author, you can create characters and line drawings and use them in your PLATO lessons.

Character sets (charsets) are usually used to create special alphabets or small pictures which are displayed rapidly on the screen. A character set (charset) is a set of 8- by 16-dot characters designed by an author for use in one or a set of lessons. Each author-designed character is assigned to a character key on your keyset for easy access. Characters can be animated to move on the screen and create a special effect. You can either create your own character, or copy one from a library of PLATO characters. (An example of an animated character is a bumblebee flying across the screen.)

The on-line AIDS contains information about the PLATO Library of Character Sets. Refer to Using AIDS earlier in this section. The word you would type at the "What PLATO feature" arrow is "charsets".

Line drawings (linesets) are usually used for large drawings or alphabets that will need to be presented in a variety of sizes. A lineset character is a letter, number or line drawn figure designed by an author for use in one or a set of lessons. Lineset characters can be presented in a range of sizes, and like characters in a charset are each associated with a key on your keyboard. Lineset features enable you to change the size of a drawing to be larger or smaller than the original size, copy a character set into a lineset, and specify automatic spacing between lineset characters. Linesets also allow you to create perfectly symmetrical drawings using a graph with x and y axes. An example of a linechar (lineset character) is a drawing which illustrates how to do calligraphy.

Charsets and linesets each use a special editor to create displays. A discussion on creating your own characters and lineset characters follows.

Creating Your Own Characters

A character is an 8- by 16-dot area on the screen. You can design your own characters by specifying which of these dots should and should not be lighted. Each letter of the alphabet is contained in one character space. Different letters are created by displaying different dots within the character space (refer to figure 4-37). All characters are created by specifying which dots to display in one or more character spaces.

Characters are created and stored in special blocks called charset blocks. Charset blocks are one of the block types in the lesson file. The following steps describe how to create a charset block.

1. From the Author Mode, type the name of your lesson and press NEXT.
2. From the block listing display (refer to figure 4-29), type the capital letter of the block preceding the block you want to create.
3. From the block creation options (refer to figure 4-31), choose to create a charset block.
4. Enter a name for the block and press NEXT. You will see the charset options display (figure 4-39).
5. From figure 4-39, choose an option. Press HELP for an explanation of the options.

NOTE

If this is the first time you are using charsets, charsets, select the "Single character/add/inspect/modify/delete" option. This is the simplest option and contains basic information on how to design a character.

You will be asked to choose a key on the keyboard to represent each character you design. This key is later used to insert the character in your lesson code.

Charset char1

Type the appropriate number >

- 1 Memory slots used
- 2 Slots available
- 3 Single character add/inspect/modify/delete
- 4 Multiple character add/inspect/modify
- 5 Make another copy of a character
- 6 Copy from another charset
- 7 Copy from char commands
- 8 Convert to char commands

Press:

LAB	to try characters
BACK	when done (save changes)
SHIFT-HELP	to exit (ignore changes)
HELP	for additional information

Figure 4-39. Character Creation Options

This display presents a list of options you will need when you create your own characters.

6. Press the key to represent the new character and press NEXT. You will see the character design display (figure 4-40).

The character design display helps you create your character. It depicts character space and lists several options for editing the character. The lines to the left of the character space correspond to the dimensions of the PLATO capital and small letters. The + on one of the editing squares is the cursor. The cursor shows you the dot within the character in which you are working. To move the cursor, use the arrow keys (a, d, q, w, e, z, x, c). If you move the cursor off the character space, it reappears on the opposite side.

The editing keys are the +, o, s, -, F, B, and i keys. They allow you to create and change your character. The +, o, s, and - keys are the primary keys used to create your character. The F, B, and i keys are used to edit your character. The editing keys function as follows:

- + Allows you to move across editing squares without changing what is in the squares (travel mode).
- o and s Puts a dot in the square in which the cursor is placed (store mode).
- Removes dots from the square in which the cursor is placed (remove mode).
- F Fills in the entire character space with o's.
- B Empties the entire character space.
- i Illustrates the character by showing you what the character will look like in its actual 8- by 16-dot size.

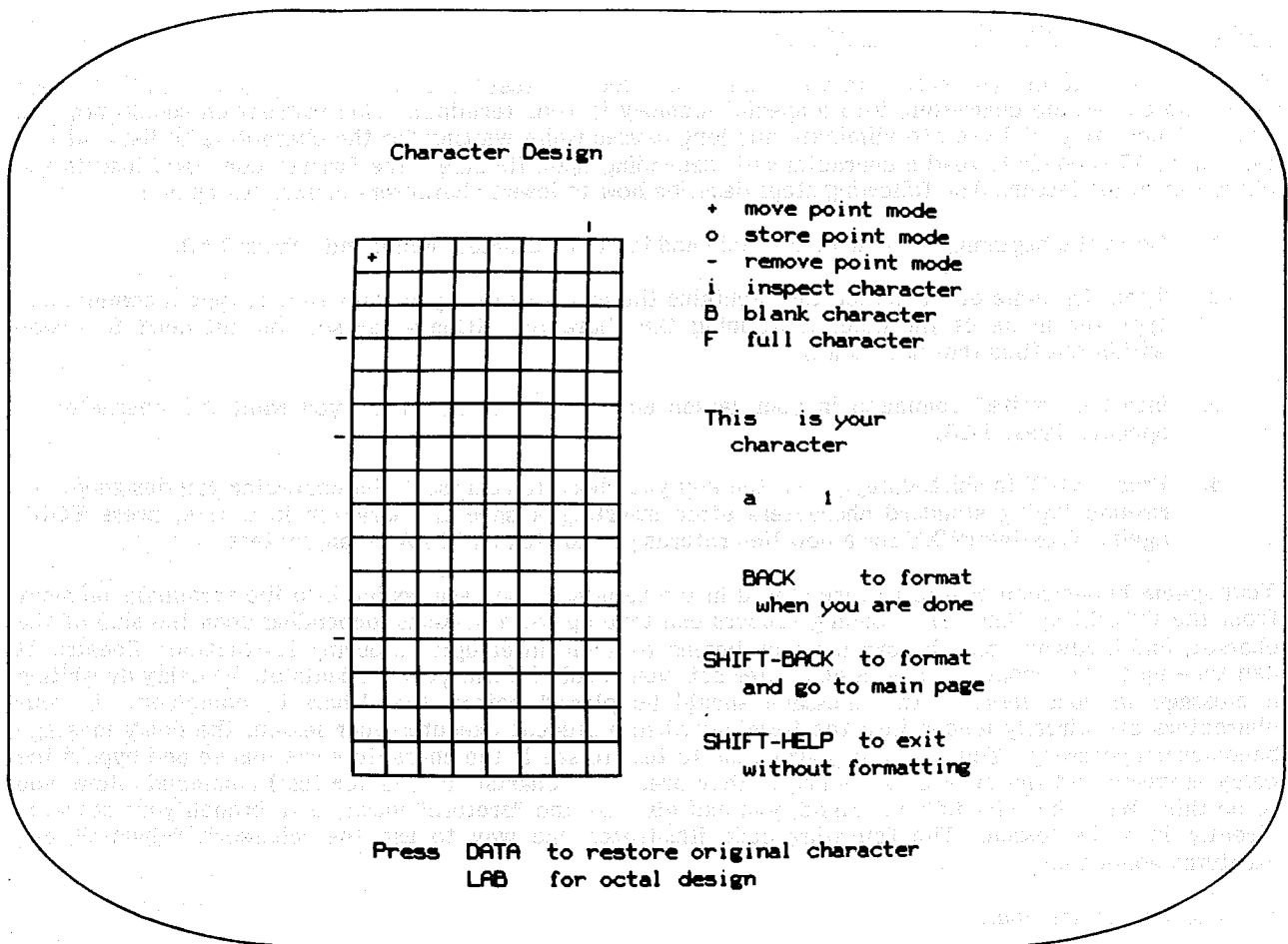


Figure 4-40. Character Design
 Characters are designed on this display depicting the 8- by 16-dot character.

Using Your Own Characters in Your Lessons

To use the characters you create in your lesson, use the "charset" and "write" commands. The "charset" command copies the characters into a special memory in your terminal. This instruction should precede the first unit of your lesson to eliminate any long pauses while waiting for the characters to load. It can take up to 17 seconds to load a character set, depending upon its size. The "write" command inserts the character in the lesson. The following steps describe how to insert characters in your lesson code.

1. Go to the beginning of your lesson code and insert a "charset" command. Press TAB.
2. Type the name of the lesson that contains the charset block you want to use, type a comma, and type the name of the block containing the character. (Character sets do not need to reside within the files that use them.)
3. Insert a "write" command in your lesson code at the point where you want the character to appear. Press TAB.
4. Press FONT (a shifted key), then the key you chose to represent the character you designed. To resume typing standard characters after inserting a special character in a line, press FONT again. Pressing NEXT for a new line returns you to standard PLATO characters.

Your specially designed characters are stored in the terminal; they are copied into the terminal's memory from the CYBER system. This loading process can take up to 17 seconds, depending upon the size of the charset, and is always done before a lesson begins to avoid interruptions during instruction. Because it can take up to 17 seconds to load a character set, you should inform your students of the delay by writing a message in your lesson. This message should be placed before the "charset" command. If your characters are already loaded into the terminal when a student executes your lesson, the delay message becomes unnecessary. You can code your lesson to test to see if the characters are loaded and bypass the delay message and the character loading if they are. The "chartst" (character test) command allows you to do this. With the "chartst" command, you can also use the "zreturn" variable to branch your students directly into the lesson. The following code illustrates one way to use the "charset", "chartst", and "zreturn" commands.

```
chartst lesson,yours  
branch zreturn, 1done, x  
at 1115  
write Setting up your lesson  
charset lesson,yours  
erase  
1done
```

With this code, if the "chartst" command causes "zreturn" to be set to -1 (indicating the characters have already been loaded), the student branches to "1done". The "Setting up lesson" message and the "charset" command are skipped because they are unnecessary in this case. If "zreturn" is set to any other value, meaning that the loading has not been performed, the "at", "write", and "charset" commands are executed, showing the message and loading the characters into the terminal.

Keys Used and Keys Available

After you have created several characters in a charset block, you might have difficulty remembering which keys you used to correspond to various characters. To see a list of the keys you used and the characters corresponding to them, do the following steps.

1. From the block listing display (refer to figure 4-29), choose your charset block.
2. Press NEXT to edit the charset. You will see the charset options display (refer to figure 4-39).
3. Type the number in front of "Memory slots used". If you have created characters in the block, you see a list of the characters and their corresponding keys.

You can also see a list of the keys to which you have not yet assigned special characters that are available for use. The following steps describe how to see this list.

1. Type the letter preceding one of your charset blocks from the block listing display (refer to figure 4-29).
2. Press NEXT to edit the charset. You will see the charset options display (refer to figure 4-39).
3. Type the number in front of "Slots available". You will see a list of keys to which you can assign characters.

NOTE

A character set can contain up to 126 characters. However, not all of these characters can physically reside in one charset block. When a charset block is full, but there are characters still available, an additional charset block is automatically created to store the remaining characters. You will notice one of your charset blocks is listed twice on the block listing display when more space was needed.

Creating Multiple Characters

Sometimes you might want to create a character larger than 8 by 16 dots. The "Multiple character" option allows you to combine characters to create a large picture or display. The following steps describe how to create multiple characters.

- 1. Create and title a charset block from the block listing display (refer to figure 4-29). You will see the charset options display.
- 2. Choose "Multiple character/add/inspect/modify" by typing the number in front of the option. You will see a grid of large squares (figure 4-41). Each square represents a character. The arrow in the upper left corner is waiting for a character key to be assigned to represent that character.

Add/Inspect/Modify multiple characters

Enter character key for each position

▶					
		LEARN			

Press NEXT to go forward, BACK to go backwards, SUP to go up
SUB to go down, SHIFT-HELP for null character.
SHIFT-NEXT to switch between number/character entry
DATA when finished, SHIFT-BACK for index

Figure 4-41. Multiple Character Assignment
You can identify characters you will combine to create a large picture on this display.

3. Type in an available key. The key appears in the first square at the left of the screen and the arrow moves to the second square.
4. Type in a key to represent a character. The key appears and the arrow moves to the next rectangle.
5. Type in a key for the third character, and so on.
6. Press SUB to move the arrow down one square.
7. Press BACK to move the arrow back one square.
8. Type in character keys for the squares in the second, third, and fourth lines.
9. After you have assigned each character you will need to a key, press DATA to begin designing your characters. You will see a large grid with a cursor in the upper left corner of the screen. The cursor and the editing keys function the same as when creating single characters. If you have a touch panel on your terminal, you can move the cursor with your finger if you are in travel mode.
10. Design your characters using the options listed at the right of the screen. The bold outlines correspond to the characters to which you assigned keys on the previous grid.
11. Press SHIFT-BACK when finished creating your character. You can either create another set of characters or press SHIFT-BACK again to return to the options display.
12. Insert the characters into your code using the same procedure as for single characters. Remember to press FONT before each new line of characters.

Copying Characters

In addition to creating your own characters, you may copy characters created by other people in their lessons. To do this, you need the permission of the owner.

There are also two character set catalogs available to all PLATO users. One catalog contains alphabetical characters; the other contains pictures similar to those listed in figure 4-42.

NOTE

These catalogs are revised occasionally so you should copy the character(s) you want to keep.

Alphabetical list of pictures

acrobat	bean	carrot	cup	eskimo
airplane	bear	cat	daisy	eye
alligator	bee	chain	deer	eyeball
ambulance	bell	chair	diamond	face
ant	bicycle	cheerleader	(baseball)	family
anteater	bird	chesspiece	dice	fan
antelope	birdcage	chests	dog	faucet
antenna	boat	chicken	doll	firecracker
antlers	bone	clefs	domino	fish
apple	book	climber	donkey	fishbowl
army seal	boot	clock	donut	fish hook
astronaut	border	cloud	door	flag
axe	boy	clown	dragon	flagman
badge	bucket	coffeegrindr	dress	flower
ball	bus	coin	drum	fly
balloon	butterfly	colonel	drummer	football
banana	button	cookie	duck	fountain
baseball	cactus	cow	elephant	fox
basket	cake	crab	elevator	frog
basketball	camel		elf	frown
	camera			
	candle			
	candy cane			
	car			

NEXT for more; DATA to choose a picture

Figure 4-42. AIDS Character Catalog

To use one or more of the characters from a character set catalog (or from another lesson), you will have to copy the character(s) into your own charset block. The following discussion describes how to copy a character.

Prior to setting up a charset block in your lesson, you should look through the catalog of alphabetical or picture characters to find the character(s) you want to copy.

To reach the PLATO catalogs, type either "charset" or "pictures" at the Author Mode display and press NEXT or LAB. You may also type "pictures" or "charset" at the "What PLATO feature" in AIDS. (Refer to Using AIDS in this section.)

You should record what lesson and charset name you want to use when you set up your charset block in your lesson. The name of the lesson for pictures is "pictures", the name of the lesson for alphabetical characters is "charset".

The name of the particular charset for pictures could, for example, be "balloons" or "cloud" depending on what picture you choose. The information you will need is shown on the upper left portion of the particular display you are looking at, for example, "charset: pictures, balloons."

Next, copy the keys assigned to the character(s) in the picture, exactly as they appear next to the picture. For example:

ef
gh

appears next to a picture of a triple-shaped balloon.

The name of the particular charset for alphabetical characters could, for example, be "gothic" or "script" depending on what characters you choose. The charset name is actually the block name in lesson "charset".

Once you have written down the name of the lesson and charset(s) you want to copy you should:

1. Go to your lesson and either create a charset block or enter an existing one and press NEXT to edit it. (Refer to Using the Lesson File, earlier in this section.)
2. Choose "Copy from another charset" from the charset options display by typing the number in front of the option.
3. Type the name of the lesson containing the charset (the one you recorded from the catalog). Press NEXT.
4. Type the charset name (the one you recorded from the catalog). Press NEXT.
5. Press NEXT to copy this character, or you may copy the entire character set by pressing DATA. Characters you do not want may be deleted once they are in your own charset block.
6. To copy an individual character, type the key representing the character you want to copy (one of the keys you recorded from the catalog). The arrow moves to "To character".
7. Type a key available in your charset to which you want to copy the character. Continue doing this until you assign all the keys you recorded from the catalog to available keys in your charset.
8. Press BACK when finished.
9. Insert the copied character(s) into your lesson code following the procedure(s) described earlier in this section.

The large grid (figure 4-44) is 120 dots wide by 120 dots high. It displays a small box to the right of the center which is 8 dots wide by 16 dots high. This box represents the standard character space and its relationship to the entire line character.

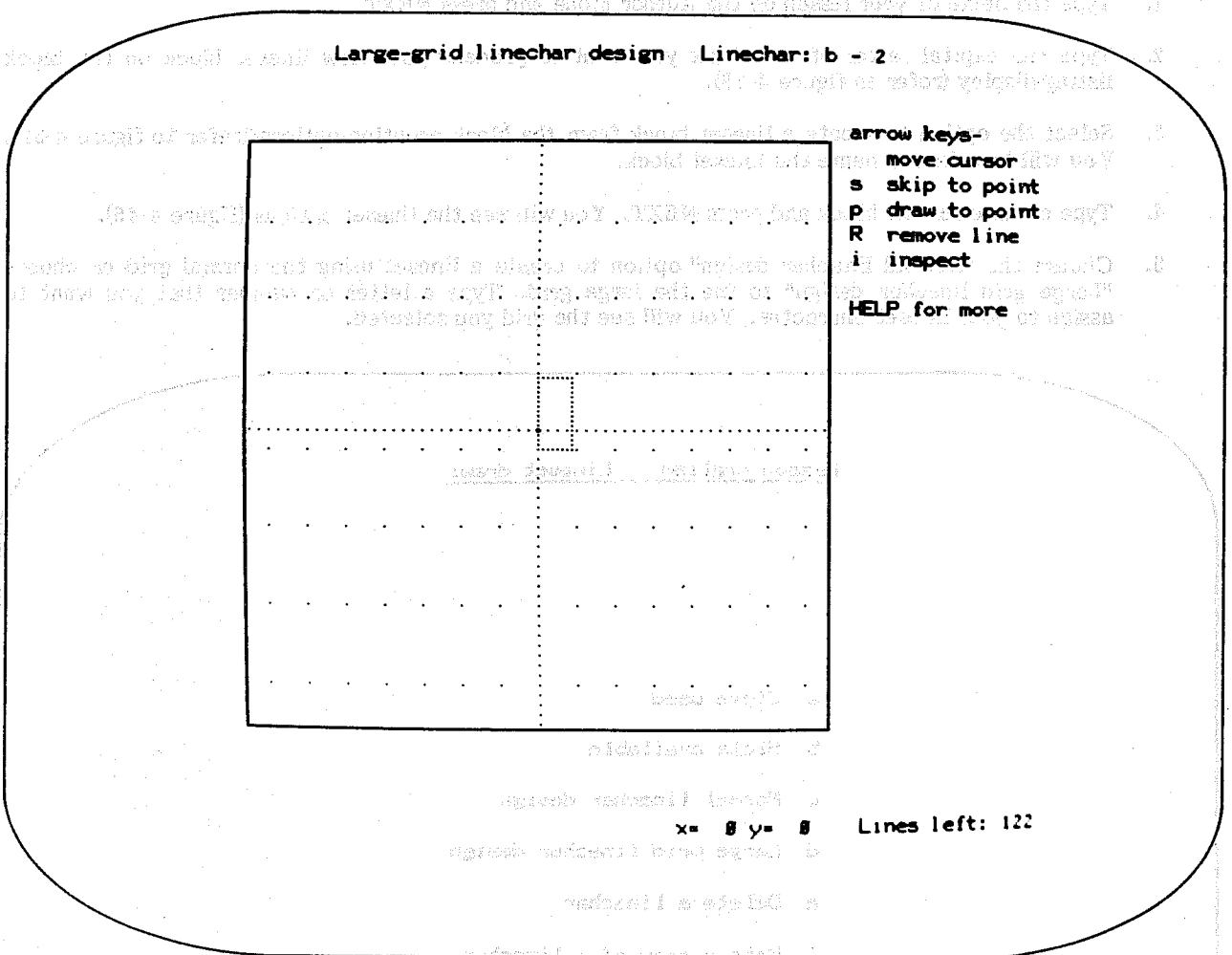


Figure 4-44. Large Grid Lineset Character Design

Line characters and drawings are created and stored in special lineset blocks. Lineset blocks are one of the block types in your lesson. The following steps describe how to create a lineset block.

1. Type the name of your lesson on the Author Mode and press NEXT.
2. Type the capital letter of the block you want to precede your new lineset block on the block listing display (refer to figure 4-29).
3. Select the option to create a lineset block from the block creation options (refer to figure 4-31). You will be asked to name the lineset block.
4. Type a name for the block and press NEXT. You will see the lineset options (figure 4-45).
5. Choose the "Normal linechar design" option to create a lineset using the normal grid or choose "Large grid linechar design" to use the large grid. Type a letter or number that you want to assign to your lineset character. You will see the grid you selected.

Lesson english Lineset draw1

- a Slots used
- b Slots available
- c Normal linechar design
- d Large Grid linechar design
- e Delete a linechar
- f Make a copy of a linechar

Press NEXT for additional options
LAB to try out your linechars
SHIFT HELP to abort changes made
HELP available

Figure 4-45. Lineset Options

This display lists several options you can choose when creating or editing linesets.

Create your character on either grid using the editing keys listed in the upper right corner of the screen. Press HELP for an explanation of the keys and NEXT for more editing options. The large grid contains some additional editing options not available on the normal grid. Table 4-2 describes the editing keys available for the normal and large grids.

Table 4-2. Functions of Editing Keys for Normal and Large Grids

Key	Function	
	Normal Grid	Large Grid
Arrow keys	Move the cursor in the direction of the arrow (SHIFTed keys move farther).	Move the cursor in the direction of the arrow (SHIFTed keys move farther).
s	Skips to a point without drawing a line. Marks a point to skip to.	Skips to a point without drawing a line. Marks a point to skip to.
p	Marks a point from x to which to draw a line.	Marks a point from x to which to draw a line.
R	Removes a line from the last point of the line.	Removes a line from the second point of the line.
i	Displays the linechar in size 1.	Displays the linechar in size 1.
I	Displays and rotates the linechar in any size or position.	No function.
S	Changes the size of the stored linechar.	Changes the size of the stored linechar.
u	No function.	Displays the coordinates at the bottom of the screen.
k	Displays a corresponding character from a charset.	Displays a corresponding character from a charset.
l	No function.	Displays other characters from this lineset.
m	No function.	Repositions entire linechar by a specified number of dots.
g	No function.	Removes and replaces guidelines on the grid.
K	No function.	Displays and amplifies one quadrant (1/4) of the large grid for you to edit.

Table 4-2. Functions of Editing Keys for Normal and Large Grids (Contd)

Key	Function	
	Normal Grid	Large Grid
EDIT	Moves cursor to the next point in the linechar to edit the linechar line by line.	Moves cursor to the next point in the linechar to edit the linechar line by line.
SHIFT-EDIT	Moves cursor to the last (end) point in the linechar.	Moves cursor to the last (end) point in the linechar.
LAB	Sets an ending position where next linechar will start plotting.	Sets an ending position where next linechars will start plotting.
SHIFT-HELP	Clears the screen and allows you to begin again.	Clears the screen and allows you to begin again.
SHIFT-NEXT	Shows a point-by-point listing of the linechar.	No function.
DATA	Replots the linechar on the screen.	Replots the linechar on the screen.
SHIFT-DATA	Restores linechar to its original form (removes all changes you made since entering the lineset block).	Restores linechar to its original form.
SHIFT-LAB	Switches to large grid mode.	Switches to normal grid mode.

Additional Lineset Options

While looking at the lineset options in figure 4-45 you can press NEXT for a list of additional options. Press HELP for more information on the options and how to use them. Some of the options available on these displays are:

Slots Used and Slots Available	Allows you to see a list of the keys that have lineset characters (linechars) assigned to them and a list of keys that are available to be assigned to lineset characters.
Delete a Linechar	Allows you to delete a linechar by typing the key assigned to the linechar.
Make a Copy	Allows you to copy a linechar and assign a character key to it.
Copy from Another Lineset	Allows you to copy either a single linechar or an entire lineset from another lineset block or the AIDS lineset library.

Lineset Library

PLATO features include a collection of linesets for you to copy and use in your lessons. These linesets are located in the AIDS lineset library. To see the lineset library, type "A" from the Author Mode display to reach AIDS. Press DATA, type "library", and press NEXT. Choose the "Lineset library" option.

To copy a lineset from the library to use in your lesson, create a lineset block in your lesson and use the "Copy from another lineset" option. It allows you to copy characters as they are.

Using Lineset Characters in Your Lesson

Linesets, like character sets, must be identified by a special command in your lesson (the "lineset" command). Tags of the "lineset" command are the lesson name and block name of the lineset to be used.

Unlike character sets, linesets are not loaded into a user's terminal; they are simply placed in extended memory along with a lesson's condensed, binary code. Your lineset is included in your extended memory lesson charge. Because linesets are not loaded into your terminal, use of a lineset does not cause any loading delay before your lesson begins executing (refer to Understanding Extended Memory Usage and Charges later in this section).

Like the "charset" command, the "lineset" command is usually placed in the initial entry unit (the first code executed before the first "unit" command) of a lesson. This is not necessary; it is a convention which makes such commands easier to find and simplifies lesson maintenance by multiple authors. Also, like programmable characters, lineset characters are indicated using a "write" command. Tags of the "write" command that are to be linechars are preceded with a FONT keypress. Unlike programmable characters, lineset characters are always presented in a size other than 0. Always precede a "write" command using linechars with a "size" command.

AIDS Listing of Display Commands

Display commands include all commands used to place or erase text or graphics on the terminal screen. The AIDS list of display commands categorizes them by type. From this list, you can see a description of a display command and how to use it.

The following steps describe how to access the AIDS display commands list.

1. Type "A" on the Author Mode display. You will see the AIDS title display.
2. Press NEXT. You will see the AIDS index.
3. Choose "Functional lists of TUTOR commands". You will see an index of the major types of PLATO Author Language commands.
4. Choose "Display commands". You will see a list of all the display commands, categorized by type.
5. Press DATA, type the name of a command, and press NEXT to see information on it.

For more information on display commands, refer to the PLATO Author Language Reference Manual. For information on other types of commands, refer to Referencing PLATO Language Commands later in this section.

SUGGESTED GUIDELINES FOR WRITING PLATO LESSONS

As an author writing PLATO lessons for students, you should make sure your lessons are clear, concise, and easy to use. The following guidelines should be followed when writing your lessons to help meet these requirements.

- List all function keys and their uses. All keys should function as documented and should not change functions unexpectedly.
- Include a title page with the senior author's name and a descriptive title of the lesson's contents. Do not put information that is subject to change on the title page.
- Inform the user of any special resources (such as slides, audiovisuals) the lesson requires immediately following the title display.
- Avoid displaying information below an arrow when you want the user to enter information at that arrow. Information should only be displayed below an arrow after the user enters information at the arrow (users tend to stop reading at the arrow).
- Avoid excessive use of slow line-drawn graphics and sized writing. These features are generally used for special effects or specific examples and should not be overused in one lesson. If you do include very slow graphics, allow the user to stop the graphic using a function key.
- Use the "long 1" instruction (after the "arrow" command) when you want the user to select an option from an index of options. This allows the user to branch to a new display with a single keypress and avoids excessive use of the NEXT key.
- Leave the bottom two lines of the screen blank when writing lessons in which students are likely to use TERM features. (TERM features use these lines and cause information displayed there to be erased.)
- Ensure the lesson does not contain any condense errors.
- Design displays to proceed from top to bottom and left to right for Western cultures.

UNDERSTANDING EXTENDED MEMORY USAGE AND CHARGES

Each time a PLATO lesson is used (executed) a copy of the original PLATO language code is changed (condensed) into binary code and placed in extended memory. CYBER systems offering PLATO services have one of two types of extended memory as one of their components: extended core storage (ECS) or extended semiconductor memory (ESM). Both pieces of equipment serve the same purpose; both are referred to as extended memory.

Every lesson uses a certain amount of space in extended memory. The number of computer words in a lesson determines the amount of extended memory it uses. (A computer word on a CYBER system is 10 alphanumeric characters. A space between characters is a character. A blank space at the end of a line is not. Capital letters count as two characters. Each block in your PLATO lesson contains up to 320 computer words.)

Extended memory is allocated to sites. A site is a group of terminals that share a pool or specified amount of extended memory. The amount of extended memory available at each site is determined by two factors: the base allotment and the current allotment. The base allotment is the amount of extended memory always available, regardless of user load. The current allotment is the total amount of extended memory available to all users at a specific site based on the total amount of extended memory not being used. This figure fluctuates according to the demand for extended memory from other sites. The current allotment adds extended memory not being used at other sites to the base allotments. To see what site you are on and information about your site's extended memory allotments, press SHIFT and type "E" on the Author Mode display (for authors) or choose the "Interactive communications" option from the PLATO Facilities display (for instructors) and select the option to "See information about this site".

There are three types of extended memory charges a lesson can accrue:

- Lesson
- Common
- Storage

The lesson usage reflects the amount of extended memory used by the binary code of the lesson. This is charged once to your site, no matter how many students use the lesson. The common usage is for the computer memory which all users of the lesson share. The storage usage is for memory that each individual uses for himself/herself only and does not share with others. The storage usage for your site always increases when more than one person uses the same lesson at one time (if the lesson requires storage for each user).

Each time you execute a lesson and return to the Author Mode display, you see a tally of your extended memory usage (refer to figure 4-46). These figures indicate exactly how much extended memory your lesson(s) uses and can be helpful in keeping track of your extended memory usage while you are creating lessons. Lessons that are 1500 words long or less automatically use 1500 words of extended memory, regardless of their size. Lessons that are more than 1500 words long use the number of computer words they contain.

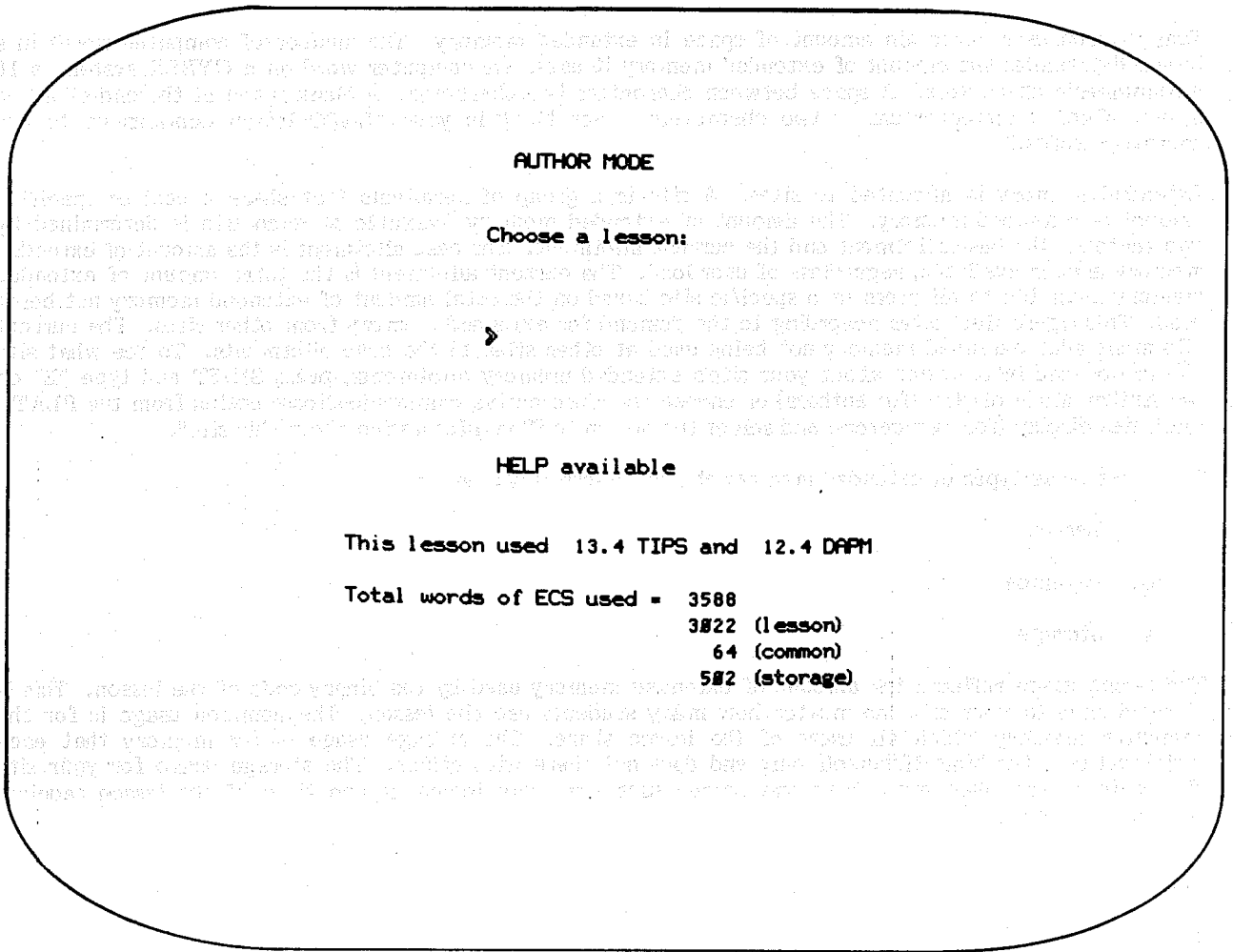


Figure 4-46. Author Mode Extended Memory Tally

When the demand for extended memory exceeds the current allotment for a site, extended memory usage is restricted by preventing users from signing on and by deleting users from lessons. Authors using lessons that require large amounts of extended memory are automatically removed from their lessons and returned to the Author Mode display. Students are never deleted nor are authors using lessons of 1500 words or less.

It is important to try to limit your extended memory usage, both as a courtesy to other users and as a means of saving on extended memory usage. The following list suggests some ways to save on extended memory usage.

- Avoid excessive use of storage.
- Keep your lessons as small as possible, without compromising the quality of the lesson.
- Schedule your usage so all people using the same lesson will be signed on at the same time. You are only charged once for the lesson binary, no matter how many people use the lesson at one time.

For more information on extended memory usage, refer to AIDS or contact a PLATO consultant.

REFERENCING PLATO AUTHOR LANGUAGE COMMANDS

As an author, you may need help understanding the function of a command, or choosing a command to make your lesson work a certain way. Two references you can use are the PLATO Author Language Reference Manual and AIDS, the on-line reference manual.

AIDS contains a list of all the PLATO Author Language and Micro PLATO Language commands and explains their functions. Since there are many commands, the commands are indexed several ways to help you to find an appropriate command even if you do not know its name.

The following steps describe how to access the AIDS index of PLATO language commands.

1. Press the SHIFT key and type "A" on the Author Mode display. You will see the AIDS title display.
2. Press NEXT. You will see the AIDS index.
3. Choose the "Functional lists of TUTOR commands", by typing the letter in front of that option. You will see an index of major types of PLATO language commands.
4. Choose the type of command you want. You will see a list of commands and several options to choose from.
5. Do one of the following steps.
 - Press LAB to see more information on the command category.
 - Press DATA, type the name of the command, and press NEXT to see information on a specific command. Many commands are a part of both the PLATO Author Language and the Micro PLATO Language. Commands that can be used in both languages are clearly labelled.

NOTE

Type "A" on the Author Mode display. Press DATA to obtain information on a command, type the name of the command at the arrow, and press NEXT. For a list of commands in the Micro PLATO Language, type Micro PLATO Language at the "What PLATO feature" arrow. While editing a lesson, you can also use the quick reference feature described earlier in this section.

USING OTHER BLOCK TYPES

PLATO features include several block types for authors to use while writing lessons. Each block type is designed for specific functions.

All of the block types available are listed on the block creation options display of the lesson (refer to figure 4-31). To create a specific block, type the number in front of the type of block you want to create and follow the instructions.

The following paragraphs describe the different types of blocks.

Common Block

A common block permanently stores variables used in your lesson. Permanent common variables are frequently used to hold cumulative data. Some examples of the kinds of data common variables can store are: the number of students that completed a lesson, the number of students that passed and failed a question on a quiz, and the average student completion time for a lesson. Permanent common variables are stored on disk when the lesson is not in use. All users of the lesson share the same common variables.

To use common variables in your lesson to collect data, you need to create a common block. The following steps describe how to create a common block.

1. On the block listing display of your lesson, type the shifted letter of the block after which you want to add the common block. You will see the block creation options.
2. Choose the "Common block" option by typing the letter in front of it. You will be asked to name the block.
3. Type a name for the block and press NEXT. You will be asked how many words of common you want.
4. Type the number of words of common you want. If extended memory is a prime consideration, specify the number you want in multiples of 64, since extended memory charges are in increments of 64 (for example, a 60-word common uses 64 words of extended memory; a 65-word common uses 128 words of extended memory).

After you create a common block, you can see and edit data in the common block. To see and edit data, type the letter of your common block from the block listing display and press NEXT.

The common block requires you to use a special editor to edit the block contents. Press HELP from the displayed data in the block for information on how to use the common editor.

NOTE

It is easy to accidentally destroy or change the values of variables in a common block if you are unfamiliar with the common editor. It is a good idea to create a sample block and practice using the common editor before using permanent common to store valid data in your lesson.

Refer to the PLATO Author Language Reference Manual and AIDS for more detailed information on how to use the common editor and for a list and description of all "common" commands (necessary to manipulate data in a common during lesson execution).

Micro Block

A micro character is used to represent a series of characters. Using the MICRO key and a micro block you can reduce the number of keypresses required to place a text string on the terminal display. Within a micro block, authors assign a text string to a micro character. To produce the text string, authors need only press the MICRO key and the key designated to represent a text string. Examples of characters stored in a micro block are frequently used commands, phrases, or numbers which authors use in their lessons or in coding their lessons. A micro character can store up to 40 characters and display them with just two keypresses (MICRO and the key chosen to represent the character string). Micro blocks are most frequently used by experienced authors who have a repertoire of coding conventions and routines established to save time entering them.

On the AIDS "What PLATO feature" display (refer to figure 4-8) type "micro" for more information on micro blocks.

Leslist Block

A leslist block stores a list of lesson names frequently referenced in the same or in other lessons. The leslist allows you to reference the leslist lessons in your code by a file's numbered position in the leslist rather than by the file name. Leslists decrease the amount of editing time required to code lessons by allowing you to reference lessons by number rather than name. They also eliminate the need to edit every file that refers to a specific lesson when a file's name is changed. If the name of a lesson included in a leslist changes, the change only needs to be noted in the leslist since the lesson is referenced by number in the code. (This can be very time saving for lessons that are frequently cross-referenced.)

Vocabulary Block

A vocabulary block is designed for use with the "vocab" or "vocabs" commands. It is usually used when an author anticipates complex answer judging in a lesson. The vocabulary block stores a list of synonymous words or phrases or a list of words or phrases to be ignored when judging a student's response to a question. These words or phrases are those normally included in the tag of an answer judging command. Using a vocabulary block to store these responses simplifies editing, since the author can reference the vocabulary block, rather than repeatedly typing all the possible responses in command tags.

Listing Block

A listing block is mainly used as an author's aid in conjunction with the search editing option (SHIFT-X). The listing block stores the information collected from a search and displays it in a list. The listing block can be inspected but not edited by an author.

Text Block

A text block stores information that is not part of the lesson. The text block is like other blocks in that both block types can be copied and deleted and the same editor is used to insert and edit information. The information contained in the text block, however, is not condensed with the code contained in other blocks. Some examples of the kinds of information stored in text blocks are: lesson documentation, code to be saved, or letters or articles to be printed at a later date.

Copy-a-Block

The copy-a-block option allows you to copy the contents of one block to another block in any lesson to which you have editing access. The following steps describe how to use the copy-a-block option.

1. Press LAB from the block creation options (refer to figure 4-31) of the lesson in which you want to insert the copied block.
2. Type the security code (change code) of the file from which you are copying blocks.
3. Type the name of the lesson containing the block(s) you want to copy. You will see a list of all the blocks in that lesson. (To see more parts of the lesson, press SHIFT +.) Press NEXT.
4. Type the number in front of the block(s) you want to copy and press NEXT. (To copy all the blocks, type "all" and press NEXT.) The blocks will be copied and included in your current lesson.

Custom Access Lists (Access List Blocks)

A custom access list is a list of groups or accounts and sign-ons or user types within them that control users options within lessons. Associated with each user type is a set of access options.

Option use is controlled by using the "access" command in a PLATO lesson. The lesson author can allow or disallow user access to lessons or options within lessons.

Custom access list creation is best illustrated by a simple example. Suppose you are the author of lesson "mktphilo", and you want to limit access to the lesson to authors of group "field". To do this, first you must create a custom access list within lesson "mktphilo".

Access lists are created and stored in special access list blocks. Access list blocks are one of the block types available in a lesson. The following steps describe how to create a custom access list.

1. From the Author Mode display, type the name of your lesson and press NEXT. The block listing display appears.
2. From the block listing display, type the capital letter of the block after which you want to create the access list block. Block creation options appear (figure 4-31).
3. Select the option to create an access list block. Enter a name for the access list you want to create. A new display appears, asking you to enter the number of blocks in the access list.

4. Enter the number of blocks for the access list and press NEXT. You will see the Access Options display (figure 4-47).

File name: english
Block name: mktaccess
List for: custom

Space left = 385

ACCESS OPTIONS

1. to see or edit access for people on same system as file (NEXT)
2. to see or edit access for another system
3. to see all listed signons
4. to edit user option descriptions
5. for special options

The list owner must set up user option descriptions before this access list can be used effectively.

Press: DATA for access list information
 BACK to exit (save changes)
 SHIFT-HELP to exit (abort changes)
 HELP for more information

Figure 4-47: Access Options

5. A message appears instructing you to set up user option descriptions before the access list can be used effectively. Choose "To edit user option descriptions". A display of six user option descriptions appears (figure 4-48).

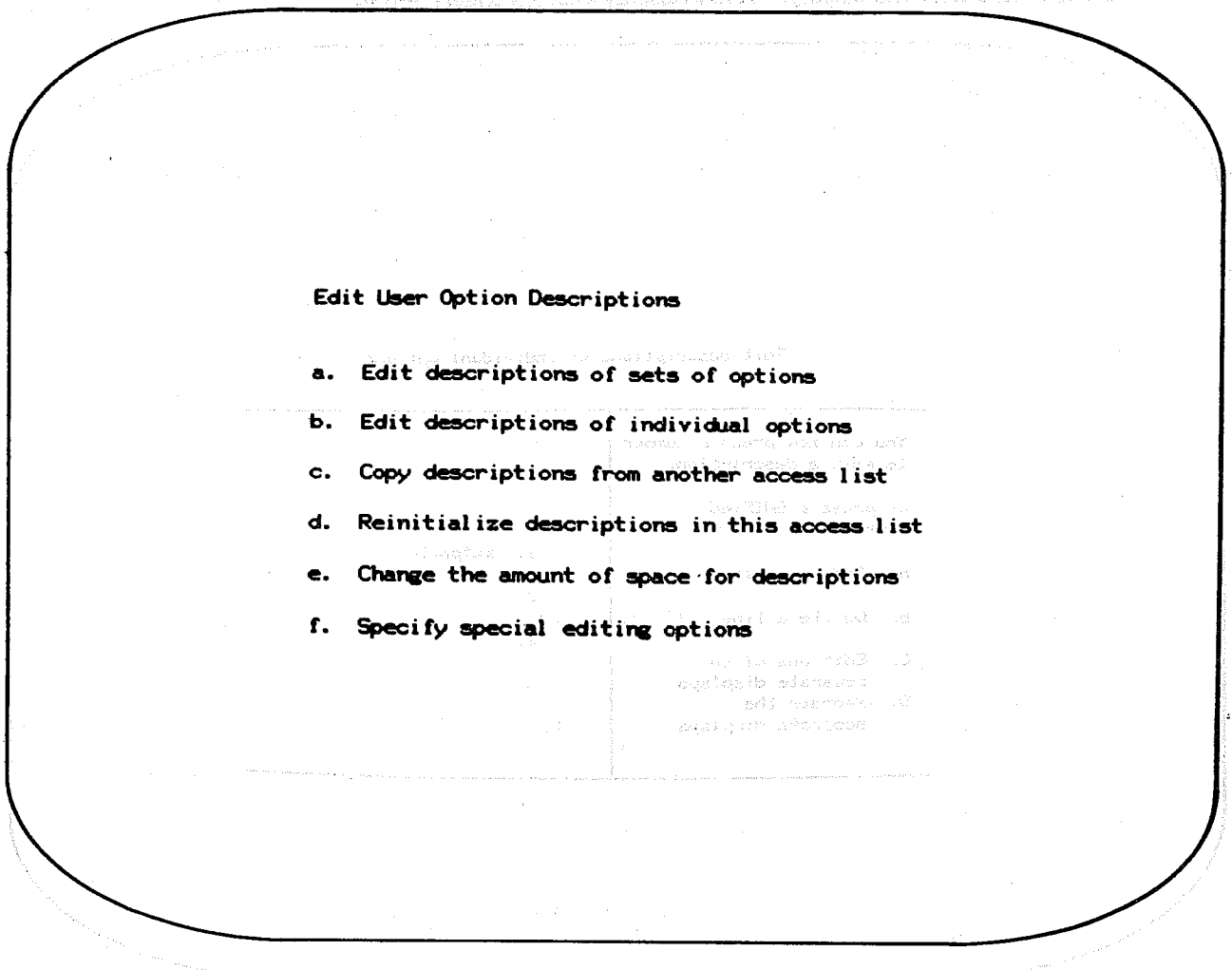


Figure 4-48. Option Descriptions

6. From the User Options display, choose to "Edit descriptions of individual options". A new display appears, asking you to enter the number of separate displays of individual options you want. One display would allow 15 options. (If you were creating a more complex access list, you would choose more than one display.) A new display appears (figure 4-49).

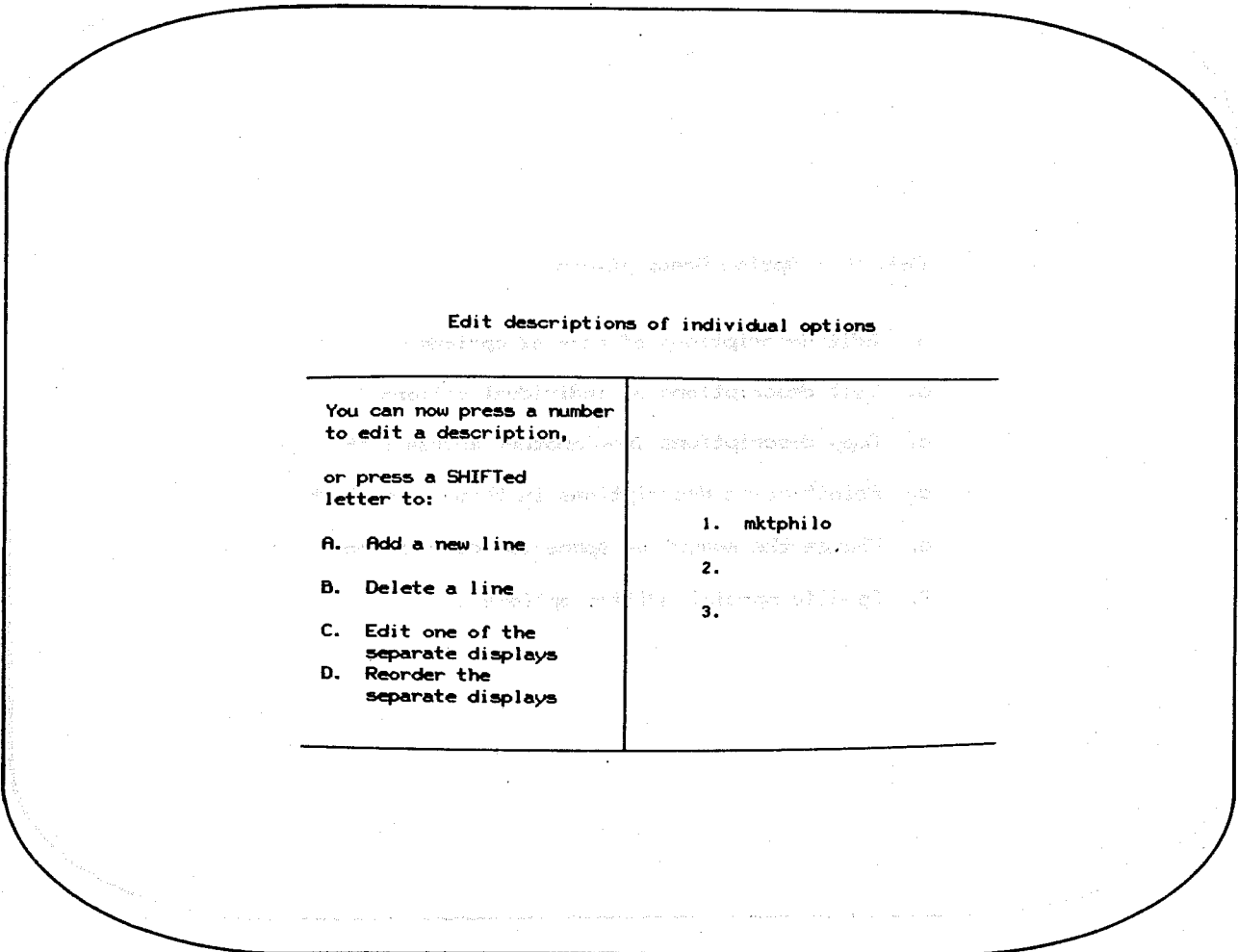


Figure 4-49. Individual Option Description

7. From Individual options, choose to "Add a new line". You will be asked to enter the title of the new option. Using the example, the name of the lesson ("mktphilo") was chosen as the title of the new option. Next, you will be asked to enter an option number. This number can be any number from 1 to 60. (A single PLATO Author Language variable can be segmented into a maximum of 60 bits. Custom access lists are designed to use a single PLATO Author Language variable. Thus, a maximum of 60 individual options are available.) Choose the number of options you would like to control using the access list. Press NEXT after entering the option number.
8. The display shows that a description of an individual option has been created. By pressing BACK, you will return to the display that allows you to edit user option descriptions. Choose the option to "Edit descriptions of sets of options". Enter the name of the first set of options. (A set of options is a group of one or more individual options.) In this case, the first set will be called "users". Press NEXT. You will see a display allowing you to edit descriptions of sets of options (refer to figure 4-50).

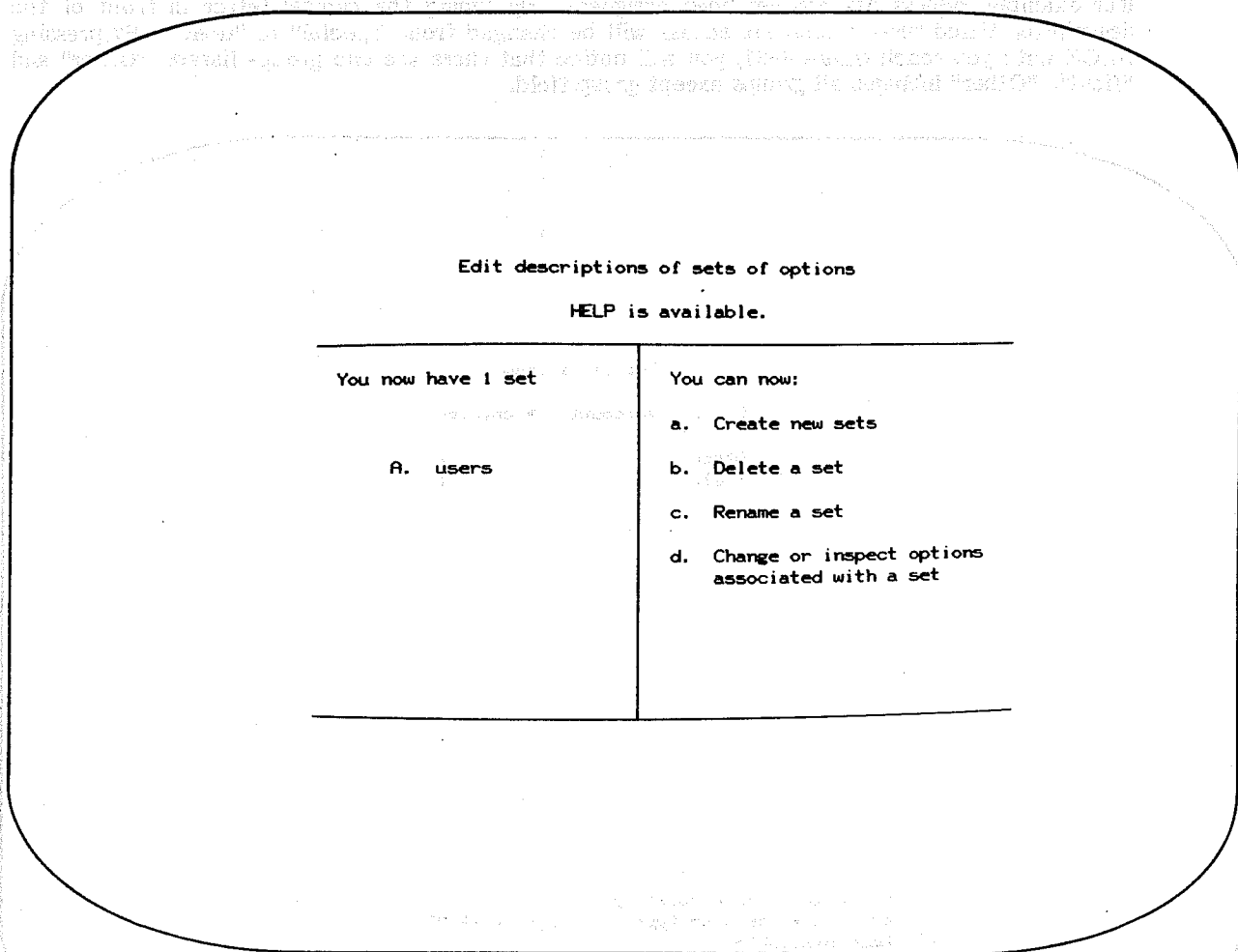


Figure 4-50. Descriptions for Sets of Options

9. Choose to change or inspect the options associated with a set of individual options. You will be asked which set you want to associate with the options. In the example, only one set is being created and it will be called users. Therefore, the capital letter in front of "users" has been typed. You will be asked to enter the new options, or press BACK. In this example, bit 5 was chosen, recalling that bit 5 was associated with the individual option to use lesson "mktphilo". Press BACK until you reach the access option display.
10. At this point, you would assign the option description "users" to the authors of group field. To do this, choose the option "To see or edit access to people on the same system as file" from the access options display. A new display appears (refer to figure 4-51). Either type the name of a group or account, the name of a specific user and his/her group or account, or a user type and the name of a group or account. Press NEXT. In this case, the user type "authors" of group "field" has been entered. To do this, type "A/field", and press NEXT. A new display will show your current access for authors in group "field" to be "special", and not have access to "mktphilo" (for example, access has not yet been assigned). By typing the capital letter in front of the description titled "users", current access will be changed from "special" to "users". By pressing BACK until you reach figure 4-51, you will notice that there are two groups listed: "Other" and "field". "Other" includes all groups except group field.

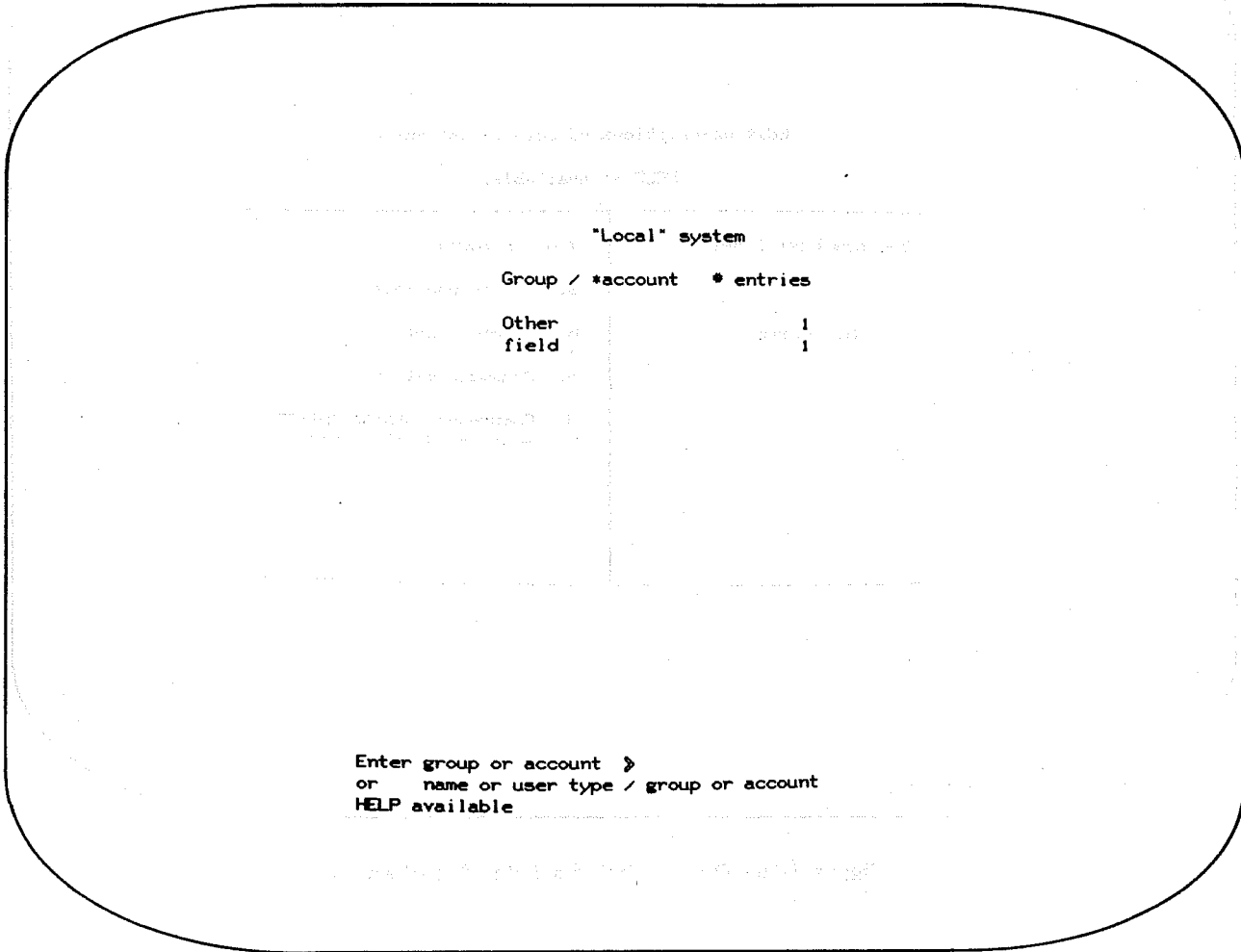


Figure 4-51. Option Assignment

The code in figure 4-52 allows you to use the custom access list. This code would appear in the initial entry unit (IEU) of the lesson using the custom access list. In this case, the code would appear in the IEU of lesson "mktphilo". Statements 2, 5, and 10 through 16 of the code use the access list to determine a given user's access.

While this example provides you with the basics for creating a custom access list, it is a very simple example. The custom access list feature allows you to perform a variety of file management tasks. For the sake of simplicity, only a few options were used in this example. However, other options on the access options display allow additional access controls.

The access options display presents five options. Besides the option allowing you to edit user option descriptions (which was chosen for this example), you can see or edit access for people on the same system as the file, see or edit access for another system, see all listed sign-ons, and use the special options. These special options allow you to erase and reconstruct the access list, copy another access list, and verify the existence of sign-ons in the access list.

For more information on custom access lists, press HELP from the access options display. You can also obtain a more complete description of the "access" command in AIDS under the keyword "access".

```

BLOCK 2-b = acc. code          SPACE = 235
1  **
2  define  accvar=124          $$ var for access command
3          segment,check=n124,1  $$ segmented to 68 bits
4  **
5  access  english,acc.code;accvar
6  **
7  ** Note that =english= is the lesson name containing the
8  ** custom access block -acc.code-.
9  **
10 if      check(5)=8          $$ if bit(5) = 1, access allowed
11 .      at      1523
12 .      write   Access Not Allowed
13 .      catchup
14 .      pause  2
15 .      jumpout q
16 endif
17 **
18 *-----
19 unit   title
20 at     486
21 write  This lesson contains company private information
22        and is available only to authors in group
23        -medicine-.
24 **
25 do     titlepg
26 **
27 do     logo
28 **
29 do     pnext(3826).
30 **
31 jump   first

```

Figure 4-52. Code Controlling User Access

USING ADVANCED EDITING DIRECTIVES

In addition to the basic editing directives authors use to insert and edit information in files, there are several advanced editing directives.

A complete description of these advanced editing directives is available when you press HELP while editing a lesson. You will see an editing HELP display with several options. The "Line display options" entry contains information on advanced editing directives.

Some of the most frequently used advanced editing directives and their descriptions are:

a	Appends specified number of lines to lines already saved.
au	Appends lines starting at top line and continuing up to specified "unit" command.
du	Deletes lines from top up to specified "unit" command.
e	Divides one block into two blocks at a specified line number.
G	Moves contents of the following block into the current block (if enough space is available) and destroys the following block.
h	Displays hidden characters such as FONT or MICRO which, although present, are not visible in the line display.
j	Saves location of a specified line number to be returned to later.
J	Returns to the last location saved by "j" option.
su	Saves lines starting at the top line and continuing to the indicated "unit" command.
t	Specifies tabsets other than standard preset tabs.
l	Specifies the number of lines to be displayed initially.
m	Modifies a character string.
M	Modifies subsequent character strings.
n	Replots the current display.
out	Deletes all edits made in the block since you entered it.
q NEXT	Allows you to see a quick reference AIDS at the bottom of the display.
q SHIFT-NEXT	Allows you to go directly to an AIDS description of a PLATO Language command or feature. Press SHIFT-NEXT while in AIDS to return to the editor.
sl	Reduces indenting level of specified lines (shift left).
sr	Increases indenting level of specified lines (shift right).
tt	Returns tabs to standard tabs.

U	Brings previous unit to top of display.
u	Brings next unit to top of display.
W	Prevents wraparound in the editor.
w	Adjusts text in a lesson to a specified width for a specified number of lines.
x NEXT	Searches and brings a specified character string to the top of the display.
x SHIFT-NEXT	Initiates a search through entire lesson for specified character string.
V	Displays modification (mod) words if they are not being displayed and removes them from the display if they are being displayed.
SHIFT-NEXT	Advances to next block in lesson.
SHIFT-BACK	Displays the preceding block.
LAB	Allows you to change the name of the block.
SHIFT-DATA	Displays an index which allows you to convert a block to another type of block. Also allows removal of mod words from a block.

USING BLOCK LISTING OPTIONS

Several options are available on the block listing display (figure 4-29). Many of these are not listed as available on the display. To see a list and description of these options, press HELP from the block listing, and choose "Block directory options".

DOCUMENTING LESSON CHANGES

The PLATO lesson has an optional feature which automatically documents changes made to its code. The mod words feature keeps a record of when and by whom changes are made and keeps a copy of the changed lines of code.

The mod words feature is frequently used when several people are editing the same lesson, or when the primary author wants to try some new code within an existing lesson without deleting the original code.

To use the mod words feature, the mod words option must be set to on ("yes") on the editing specifications display accessed from the block directory of your lesson. The following steps describe how to access the mod words option.

1. Press DATA from lesson block listing (figure 4-29). You will see the lesson directory.
2. Select "Editing specifications".
3. Select "Mod words" by typing the letter in front of the option. Typing the letter again turns the option off ("no").

For more information on mod words and how to use them, press HELP while editing your lesson or from the editing specifications display. You can also refer to AIDS for more information on mod words.

WRITING ROUTERS

Some curricula or lessons have special requirements which cannot be met with the PLATO router "mrouter" or PLATO Learning Management. As an author, you can write a router using the PLATO Author Language or the Micro PLATO Language to meet the specific needs of a curriculum.

An author-written router is similar to a lesson as it can be programmed to do anything a lesson can. Its major function usually is to route students to lessons; however, it can also be programmed to record information, analyze and summarize data, present and regulate lesson sequencing and prerequisites, use the touch panel, and limit access to lessons.

To write a router, you need to know the PLATO Author Language or the Micro PLATO Language. Experienced authors usually can write routers. To learn how to write a router, go to the AIDS "What PLATO feature" arrow (refer to figure 4-8) of AIDS and type "writing your router". You can also use TERM-consult to receive on-line help from PLATO consultants when writing your router.

PREPARING LESSONS FOR PUBLICATION

As an author, you can publish your PLATO lessons and make them available to large numbers of users. Published lessons are copyrighted and included in the Catalog of Published Courseware, and are available for use on all Control Data systems offering PLATO services. Published courseware may or may not be available on systems not operated by Control Data.

Published lessons must conform to the Control Data Technical/Mechanical Standards for Computer-Based Courseware. To obtain a copy of these standards, refer to Related Publications in the preface of this manual. Lessons are reviewed by Control Data personnel prior to publication. The review process checks for deviations from published lesson coding standards. It also checks for spelling, grammar, and punctuation errors. Interaction with the operation of other PLATO lessons is also evaluated.

You can do a prepublication review to check your lesson for deviations from published coding standards and references to other files using lesson "filescan". The information collected during the check can be displayed or stored in a dataset to be printed.

The following discussion describes how to use "filescan" to check your lessons for potential deviations from publishing standards, and to prepare your lessons for publication by renaming files and generating lists of the new file names.

To use the lesson, type "filescan" on the Author Mode and press DATA. You will see four options: "filescan", "leslist options", "file conversion", and "change the Micro PLATO level in a file directory".

Filescan

Choosing "filescan" allows you to identify up to three information categories for which you would like to have your lesson(s) searched: publish errors and warnings (possible coding problems); external references (a list of references in the code to files, or file parts not contained within the lesson); and text (separating the text from the code simplifies professional text editing).

Leslist Options

Leslist options are most useful when large sets of lessons making up a course or curriculum are being renamed. If you do not wish to submit your manuscript (original) copies for publication, you must make a complete set of copies. Once renamed, these files must retain correct references to each other within the code.

The renaming process is simplified by the rename leslist. This leslist allows you to enter current file names in even-numbered slots (0, 2, 4 ...). A rename option will generate new file names for you by adding a given prefix to all listed file names and placing the new file names in odd-numbered slots.

Leslist options include:

- Copy a leslist into a rename leslist, placing all given file names in the even-numbered positions.
- Generate new file names. (Note that new file names are generated, not the files themselves.)
- Copy a rename leslist into a standard leslist, sequentially listing all new file names.
- Display leslist entries.

File Conversions

After new file names have been generated and the files have been created, references to the original file names in the code must be changed to match the new file names. This option automatically identifies all references to the original file names and converts them to the newly generated file names.

Changing Micro PLATO Levels

All files copied onto a flexible disk must be set to the same level of the Micro PLATO Language. Before beginning to copy files, you are encouraged to check the levels of all files and set them to the same level. From a leslist of files, this option will check the level of each file in the list, changing to a specified level when necessary.

USING DATA COLLECTION FILES

As an author, you can collect and store large amounts of information in PLATO files. There are three types of data collection files: dataset files, nameset files, and code files. Dataset and nameset files are often used to store information related to PLATO lessons, similar to the information contained in common variables. They are similar in function, but different in structure. Code files are used to store code other than the PLATO language code.

DATASET FILES

A dataset is a special file which stores information. It is often used as an auxiliary file for large amounts of data collected from or used in a lesson. Some examples of the kinds of information you can store in a datafile are: cumulative statistics, pools of questions and answers to be used in a test, responses made to test items, scores of the top 10 or 20 winners of a game, and so on. A dataset is composed of records (the parallel to the block in the lesson file). Each record can store a specific number of words. Record sizes can range from 64 to 512 words. The default record size is 320 words, but dataset records can be any size you choose. The size of the records is determined when the dataset is created. Contact your account director to create a dataset file if you do not have account director capabilities.

Data manipulations within the dataset are done through the records. The dataset essentially allows you to choose the format of the data structure and store information according to that format.

Datasets are useful for storing information which, because of its quantity or structure, may be conveniently accessed in relatively small blocks from a larger pool. Datasets allow you to take one or more records and bring them into the variables your lesson is using, and to take one or more of the variables in your lesson and copy their values into the dataset.

For more information on datasets, type "datasets" at the AIDS "What PLATO feature" arrow.

NAMESET FILES

Nameset files are similar to dataset files in function but not structure. A nameset is composed of one or more sets of names with a variable number of records associated with each name. Each nameset contains an alphabetical directory of the names in the nameset. All operations related to reading and writing records are defined by the name.

The length of a nameset is determined by the number of parts it contains. Namesets can contain up to 63 parts. Records can be between 64 and 512 words long. The default record size is 320 words. The size of the nameset is determined when the nameset is created. Contact your account director to create a nameset for you if you do not have account director capabilities.

Namesets provide more flexibility for organizing data than datasets. Each name within the nameset can be considered a dataset in which records can be inserted or deleted. Names can also be added or deleted at will.

For more information on namesets and to learn how to use them, type "namesets" at the AIDS "What PLATO feature" arrow.

CODE FILES

Code files store any code or text written in languages other than PLATO languages. They are similar to lesson files in that they contain parts and blocks, and are edited in the same way. Code files, however, cannot be condensed or executed as lessons and are never changed by conversion programs. The maximum size of a code file is 18 parts.

For more information on code files, refer to AIDS or contact a PLATO on-line consultant.

USING ADVANCED AUTHOR OPTIONS

Authors have a wide range of PLATO features available to them. Many of these features were designed as time-savers for experienced authors.

The following paragraphs describe some of the time-saving features available to authors.

TERM-pnote

You can write a personal note from any point using the TERM-pnote feature. To use TERM-pnote, press TERM (hold the SHIFT key down while pressing the TERM/ANS key), type "pnote", and press NEXT. The bottom two lines of your display will be erased and you will be asked for the Personal Notes address. Type the name, group, and system of the person to whom you are sending the note, pressing NEXT after each entry. You will be asked to verify what you typed by pressing NEXT if the address is correct, or BACK to change it. Type your note. As you type, the text appears to the right of the arrow. Press NEXT for a new line, BACK to see previous lines typed, or HELP for more information. Press SHIFT-NEXT to send your note when finished, or SHIFT-BACK to cancel the note. You will be returned to your original activity.

SETTING AN ALARM

You can set a PLATO alarm to alert you at a specified time. When you set an alarm, the alarm and message are sent to you no matter what you are doing.

To request an alarm, type "Z" on the Author Mode display (if you are an author). Select "Choose a lesson to study" from the PLATO Facilities display, type "alarm", and press NEXT (if you are an instructor). A display appears allowing you to request an alarm. From this display, you can set the time you want the alarm to go off (within 24 hours) and type the message you want to appear with the alarm.

You can only have one alarm set at a time. If you set one alarm and then set another, the first alarm is deleted and the alarm is reset to the second time.

USING AN AUTOMATIC SIGN-ON

As an author, you can request to have an automatic sign-on (auto sign-on) assigned to you from the PLATO service center. An auto sign-on allows you to sign on to the PLATO services using a partial sign-on at a specific terminal (for example, typing only your password at the terminal in your office).

NOTE

Only terminals directly connected to a CYBER system can use this feature. It is not available to users communicating through a telephone.

When you request an auto sign-on from the PLATO center (ask any user in PLATO group p or pso), you can select the type of auto sign-on you want to use. The type of auto sign-on you select determines which part(s) of your sign-on you type to sign on. Several options are available. The most frequently used auto sign-on requires you to type your password only. Other available options allow you to type both your name and password or choose a new password the first time you sign on using your auto sign-on.

USING AUTHOR TERMS

Some PLATO features are available only to authors. Four of these features are TERM-cursor, TERM-grid, TERM-step, and TERM-charset. These four TERMS are restricted to authors since they are tools used when coding a lesson. (Refer to section 2 for information on how to use other TERM features available to all users.)

TERM-cursor

TERM-cursor identifies display locations using a small cursor. To use TERM-cursor, press TERM, type "cursor", and press NEXT. Press the arrow keys (a, z, x, c, and so on) to move the cursor on the display. Each keypress moves the cursor one character space if you are in gross grid and one dot if you are in fine grid. Press the shifted arrow keys to move eight character spaces in gross grid or eight dots in fine grid. The current location of the cursor is displayed in the lower right corner.

To switch from gross grid to fine grid, type "f"; to switch from fine grid to gross grid, type "g". TERM-cursor also activates the touch panel, allowing for touch-directed movement of the cursor.

To leave TERM-cursor and return to your previous activity, press BACK or SHIFT-STOP.

Study the PLATO lesson "0term curso" for more detailed information on how to use this feature.

TERM-grid

TERM-grid draws a grid of touch panel squares over your current display. The touch panel divides the display into 256 squares. TERM-grid, however, does not activate the touch panel. The grid stays on your display until you go to a new display, or replot the display.

To use TERM-grid, press TERM, type "grid", and press NEXT.

TERM-step

TERM-step allows you to proceed step by step through a lesson (when you know the security code), one PLATO language instruction at a time. In step mode, the lesson commands are displayed one at a time in the same sequence as the commands are executed. Executing the lesson in this manner is useful in finding programming errors. TERM-step is not available for use with the Micro PLATO Language.

Step mode can be reached in two ways.

- While executing the lesson as a student, press TERM, type step, and press NEXT. The step mode is initiated from that point in the lesson.
- Enter a "step on" in the lesson code just ahead of the point of interest. Existence of this command in the lesson in no way affects student execution of the lesson.

In step mode, the bottom lines of the display the current, main, and base units of the lesson, the state (judging or regular) the lesson is in, and the next command that will be executed when you press NEXT. Each time you press NEXT, the command presently listed is executed and the succeeding command is then displayed. The values of variables may be examined at any time in step mode.

The "Waiting for Key" message means that a response or keypress is needed to continue in step mode.

The arrow at the bottom of the display enables you to see the current values of any variables (refer to table 4-3). Press HELP for information at that point. Press either a (alpha), o (octal), v (floating point), or i (integer) to indicate the desired format. At the second arrow, enter one of the variable types, from table 4-3, followed by the variable number. At the second arrow, you can also enter error or zreturn and see the value of those variables.

Table 4-3. Variable Types

n or v	Student variables
nc or vc	Central memory variables
nr or vr	Router variables
c	Common variables
s	Storage variables
1	Local variables

Variables in the defined set "student" may be requested by typing in the defined name.

Typing "s" and a number at the arrow skips forward that number of commands before reentering the step mode. To examine more than one variable at a time, press SHIFT-DATA. At the arrow you may also inspect variables in the formats (or any combination) shown in table 4-4.

Table 4-4. Variable Formats

i	integer
o	octal
a	alpha
f	floating

Press BACK to end TERM-step.

For more information on TERM-step, refer to AIDS. At the "What PLATO feature" arrow, type "step".

TERM-charset

TERM-charset is used to reload the a lesson character set that has been destroyed by communications errors. It is an aid for students as it reloads the a lesson character set without making the student leave and reenter the lesson. It is also an aid for authors as it removes the necessity for coding this type of protection into each lesson.

ADDITIONAL SECURITY OPTIONS

Most PLATO files have several security codes associated with them. These security codes control various kinds of files access (such as change access and inspect access). Each time you access a file, you are required to type or match the file's security code. (For example, if the file has a typed security code, you must type the security codeword of the file in order to access it; if the file has a group or account code, you must be in that group or account in order to use the file.)

Each time you type the security codeword, that security codeword is stored in your author record. This codeword remains in your record until you type a different security codeword for another file. The new codeword then replaces the first one you typed and is stored in your author record until another new codeword is typed, and so on.

Since your author record stores the last codeword you typed, you can consecutively access files which have that same typed codeword without typing the codeword each time. However, if you attempt to access a file which has a different codeword than the one last stored in your author record, you are required to type the associated security codeword to see the file. That codeword then replaces the codeword previously stored in your record and enables you to access files that have the same codeword without typing the codeword each time.

Although the stored codeword feature makes it convenient for you to consecutively access several files with shared typed codewords, it also increases the risk of unauthorized users accessing some of your files in the event your sign-on is stolen. Since the file codeword you last typed is stored in your author records, any person using your sign-on could gain access to all your files that have the same codeword as the one last stored in your author records. You can protect these files by changing the codeword last stored in your author records before signing off.

To change the stored codeword in your author records, type "S" on the Author Mode display. Type anything that cannot be easily guessed by other users, and press NEXT. You do not have to remember what you typed since this is changed the next time you attempt to access a file and type the file's codeword.

NOTE

Although this added security measure helps protect your files from access by unauthorized users, it does not in any way reduce the importance of protecting your sign-on password.

ADDITIONAL OPTIONS

Although the Author Mode display does not contain a list of options, by pressing SHIFT-DATA you can see a list of options that can be used from the Author Mode display (refer to figure 4-3). This display functions as a reference tool which reminds you of what key to press to access a specific feature. All the options are accessed from the Author Mode display by typing the shifted letter of the option. Refer to The Author Mode Display earlier in this section for more information on this display and for a list of the most frequently used options. The remaining options available to most authors are:

<u>Letter to Type to Access</u>	<u>Title</u>	<u>Description</u>
A	AIDS	Displays the AIDS "What PLATO feature" arrow and allows you to request information on a PLATO feature or PLATO language command.
B	bulletin board	Lists new PLATO features and special notices for authors.
C	charset	Allows you to load or inspect a character set from any lesson for which you know the inspect codeword.
D	desk calculator	Performs simple numerical calculations and gives the answer in integer, octal (floating point and integer), hexadecimal, and binary. Also gives the alphabetical equivalent of the number.
E	ECS usage	Lists how extended memory is being used at your logical site and the amount of extended memory allotted.
F	SHIFT-f catalog	Displays the main index of the PLATO Catalog of Published Courseware.
I	information on records/ talk flags	Supplies information about your talk options and your use of PLATO features. Allows you to set and change these options.
J	j-stack	Allows you to set a marker while editing. This option, can be reached from the Author Mode display (by typing SHIFT-J) and while editing a file. Refer to AIDS for more information.
L	lineset	Allows you to inspect any lineset in any lesson for which you know the inspect codeword.

**Letter to Type
to Access**

Title

Description

M	micro	Allows you to inspect any micro table in any lesson for which you know the inspect codeword.
N	communications display	Displays the PLATO Communications Display, which offers you choices of various modes of communications such as Personal Notes.
O	notes sequences	Takes you directly to the first notes file you have not read in your Notes Sequencer.
P	personal notes	Takes you directly to any unread personal notes or to the display, which allows you to send a personal note.
Q	questions (aids)	Displays the AIDS "What PLATO feature" display and allows you to request information on a PLATO feature or PLATO language command.
R	print request	Takes you directly to the Print Requests display, which allows you to request prints.
S	security code	Allows you to change your lesson security code.
T	time	Displays the current time of day.
V	version	Displays information on the current PLATO version in use.
X	lesson x-search	Searches a lesson or set of lessons for occurrences of specific character strings.
Z	alarm service	Allows you to write a message and specify a time to display the message to you.

PREPARING LESSONS FOR MICROCOMPUTER USERS

Lessons written in the Micro PLATO Language can be used in one of three ways. Most frequently, these lessons are copied onto a flexible disk or set of flexible disks which are duplicated and distributed for student and instructor use. Frequently, these same lessons are used at terminals connected to a CYBER system offering PLATO services over a communications network. And occasionally, a small lesson (up to 15 units) is copied from a disk drive connected to a CYBER into the memory of an IST II, IST III or Viking terminal. This copying is done while the terminal is connected to the CYBER by a communications network. The copied code is then run in the terminal.

This discussion concentrates on the first of the three uses, preparing flexible disks for student and instructor use by copying a router and lessons onto a flexible disk. It describes the routers available for flexible disk use, gives instructions for copying routers and lessons onto flexible disks, and describes Control Data's flexible disk duplication service. Instructions for using lessons written in the Micro PLATO Language on a CYBER system are also included, along with an orientation to using the Micro PLATO Language.

NOTE

The following paragraphs explain how to prepare a flexible disk after lessons have already been written, tested, and revised. To begin writing lessons for flexible disk use, refer to Writing PLATO Lessons earlier in this section. Authors using the Micro PLATO Language should read Using the Micro PLATO Language later in this section.

ROUTERS AVAILABLE FOR FLEXIBLE DISKS

A router is a PLATO lesson with special data collection capabilities that is used to organize and present lessons to students. Instructors use routers to identify and group all of the lessons to be used in a course or curriculum. Routers then present these organized sets of lessons to students as module and lesson indices from which they choose modules and lessons to study. On a flexible disk containing PLATO courses, the router is always the first lesson a student sees.

PLATO features include one router to organize and present lessons on flexible disks. It is called the PLATO router, and is available in lesson "mprouter".

Lesson "mprouter" organizes and presents lessons to students using flexible disks for lesson delivery. Only lessons written in the Micro PLATO Language can be used with "mprouter". Authors or instructors will be offered several choices including the order in which lessons are to be presented, and whether or not they wish to collect and review student or lesson data. An author or instructor makes these choices using "mprouter" on a terminal connected to a PLATO network. After all the desired choices are made, "mprouter" and the lessons listed within it can be copied onto a flexible disk and delivered using a Control Data microcomputer. (Section 1 discusses Control Data microcomputers.)

The PLATO router "mprouter" is available to students in English, Swedish, and German. All three languages are available through the same lesson.

Any author can write a router for flexible disk use. You can prepare a router using a lesson file and the Micro PLATO Language (refer to Writing PLATO Lessons earlier in this section). Refer to Master Flexible Disk Drive in section 1 for details about handling a flexible disk.

USING THE PLATO ROUTER ("mprouter")

In most cases, PLATO authors will organize and copy a router and its associated lessons onto a flexible disk. But, in some cases, instructors also might. Instructions are included for both user types.

To copy the PLATO router "mprouter" onto a flexible disk, you will need a Control Data microcomputer (either a Micro PLATO Station or a Control Data 110 using either an IST-III or a Viking terminal) connected to a CYBER system offering PLATO services and an 8-1/2 inch double-sided, double-density flexible disk.

To begin, turn on the terminal, connect to the CYBER system through the network in the usual way, and sign on. Turn on your disk drive, insert a flexible disk, and close the disk drive door. Authors type "mprouter" at the Author Mode, and press DATA. Instructors should "Choose a lesson to study" from PLATO Facilities and enter "mprouter" at the arrow.

Disk Preparation

Students, instructors, and authors are offered different options by "mprouter". Section 2 describes the student options; section 3 describes the instructor options. The author options detailed in the following paragraphs prepare a blank flexible disk to read and execute PLATO lessons; copy all necessary PLATO software and lessons onto a disk; and control the availability and functioning of the student and instructor options, the lesson list and its organization, and the language used (English, Swedish, or German).

Two types of disks can be created with "mprouter":

- A "public" disk can be used by any number of users. Public disks do not recognize students by name and do not collect performance data. They can be used for demonstrations, for games, or for general information distribution for which testing and performance monitoring are not necessary.
- A "private" disk requires users to identify themselves by name and collects performance data. Student passwords may or may not be required on private disks.

You will be asked to select the "level" of the disk. The level refers to the Micro PLATO Language level (discussed in Micro PLATO Language Levels later in this section). All lessons on one disk must be of the same level.

NOTE

When selecting "mprouter" options, you will experience pauses and see the message: "Loading Micro PLATO units."

You will be asked to name the disk and select the language (English, French, or German) in which all titles and instructions will be presented to students. After you have made these choices, disk preparation begins.

The first step in the disk preparation process is initialization. Initialization refers to copying PLATO software onto the disk. This software allows the terminal and disk drive to communicate with each other, and interprets lessons for presentation.

Once the disk is initialized, you will see figure 4-53. This index allows authors to set or change the disk by setting specific options.

NOTE

About an hour is required to initialize the disk and copy the router onto it. If the process is interrupted, it must be redone.

```
MICRO PLATO ROUTER OPTIONS
8. Title: Counting Money
1. See/edit catalog of lessons: 5 lessons entered
2. Student records: kept
3. Maximum students ..... 38
4. Allow self-enrollment ..... yes
5. Show lesson scores ..... instructor only
6. See/edit lesson sequencing: simple indexed
7. Allow lesson review ..... yes
8. Copy student/lesson data from disk: 2 students rostered
9. Examine Copied Data
```

ENTER ITEM NUMBER.

SHIFT-DATA for Disk Management Options

SHIFT-HELP to reinitialize disk
HELP is available

Figure 4-53. Author Options in "mprouter"

Author Options

The PLATO router "mprouter" allows authors to specify which lessons to present, their presentation order, and the required completion criteria. The options available are pictured in figure 4-53, the index of PLATO router options.

SHIFT-DATA from figure 4-53 takes you to the following Disk Management Options.

See a list of files on disk.

Copy files to disk.

Lesson.

Character set (refer to Creating Characters and Line Drawings earlier in this section).

Add/delete/rename files on disk.

SHIFT-HELP from figure 4-53 clears all current settings. This keypress destroys all information on the disk and begins the initialization process.

Choose the "Title" option to enter a change of the disk title. Students will see this title at the top of the first display. Titles may contain up to 40 characters.

Editing the Lesson Catalog

To see or edit the catalog of lessons currently entered on the disk, choose the first option. You may add, delete, or rename any lessons from this display.

The lesson catalog lists each lesson by filename and title. (Students see only lesson titles, not lesson file names.) You will also see the number of lessons currently entered.

To edit the lesson names and titles, type an editing directive followed by a number. Type "Rn" to replace, "In" to insert, or "Dn" to delete. (Capital or lowercase letters can be entered.) To replace the second lesson, type "R2". To insert a new lesson after the second lesson, type "I2". When you finish editing the catalog, the disk is checked for lessons that have not yet been copied. Lessons not on the disk will be copied at that time.

When replacing or deleting lessons from the catalog, lessons are not automatically deleted from the disk. Therefore, you can change the order of the lessons in the catalog by deleting from one position and inserting in another. All additions to and deletions from the disk are made at the same time, when you have made all changes to the catalog.

Preparing Private and Public Disks

Choosing "Student records" allows you to specify if student progress data is to be kept or not, making your disk public or private. Private disks require students to identify themselves. If student records are to be kept, the related options described below become available. Choosing the "Student records" option after creating a private disk will list the records.

Choosing "Maximum students" allows you to put an upper limit on the number of students this disk and all copies of it will accommodate.

Choosing to "Allow self-enrollment" toggles the choice from yes to no. Self-enrollment makes it possible for a student to choose and enter her or his own sign-on the first time a disk is used, reducing an instructor's administrative tasks. Before a disk is used, an instructor can change this option to suit his or her instructional situation.

Choosing to "Show lesson scores" makes progress data available to students as well as instructors. (Each student has access only to her or his own scores.) Again, an instructor using a disk can toggle this option by typing the number in front of it.

Lesson Sequencing

The following lesson sequencing options are available when using "mprouter". Choose to "See/edit lesson sequencing" and follow the instructions to make your choices.

Indexed: Students may choose any lesson.

Series: Students must study lessons in the order they are listed in the catalog.

Indexed with prerequisites: Students may choose a lesson if they have completed its prerequisites. The lesson sequencing display shows up to 26 lessons (maximum). Next to the name is a series of letters indicating the lesson's prerequisites (requirements for completing that lesson).

Typing "S" places lessons in a "simple index" (lessons must be studied in the order they appear).

Typing "C" removes prerequisites from all lessons, making all lessons available.

Typing "Px" ("P" and the letter before a lesson) specifies its prerequisites. At the arrow requesting the prerequisite list, enter the letters listed before the lessons. A sequence of lessons can be represented by a dash between the first and last letters of the sequence. For example, a-d represents a, b, c, and d.

Review of completed lessons can be allowed or disallowed for any of the sequencing options listed above. Choosing "Allow lesson review" toggles your choice between "yes" and "no".

Copying Student Data

Student data can be copied from a number of flexible disks into a nameset on a CYBER system offering PLATO services. Such student record consolidation is desirable for overall performance and historical analysis.

Before you can use this option, you or your account director must create a nameset. When creating the nameset, any record or name length is allowed.

Choosing to "Copy student/lesson data from disk" will copy student data (lesson completion, exempts/locks, and scores) from the disk to your nameset. Follow the prompts to copy the data. Be sure you remember the nameset name and security codeword.

You may store the data in your nameset in one of two ways:

- Create a new name and store data in it.
- Delete old data from a name in the nameset and store new data in it.

Once student data has been stored in a PLATO nameset, you can examine it at anytime using the "mprouter" option "Examine copied data". To look at student data you must enter the nameset name and security codeword.

Authors can also write their own PLATO lessons to display student or course summary data. Help sequences in "mprouter" describe the format of the data in the nameset.

THE PLATOSCRIBE ROUTER

The PLATOSCRIBE router "s@scribe" gives you access to the following collection of PLATO features.

- Prints (screen/file).
- Graphics (GUIDE).
- Personal Notes.
- General Notes.
- Teleconferencing.
- PLATO AIDS.
- File management (files). You will be able to create such files as notes files, Documentor files, and GUIDE files. You will also be able to delete, rename, copy, lengthen, and shorten files that you have created.
- TERM-spell.
- TERM-calc.
- TERM-talk.
- TERM-time.
- Documentor.
- NOS access.

These features, excepting PLATO AIDS and NOS access, are discussed in sections 1 through 4 of this manual. You may also read about any of these features in AIDS. At the AIDS "What PLATO feature" arrow, type the names of the items you want to read about.

Your account owner or director will determine whether or not you will be able to use the PLATOSCRIBE router. Contact that person if you have questions about the availability of this application.

USING YOUR OWN ROUTER

All new flexible disks must be prepared for use, or formatted. Formatting is the imposition of a bit pattern on the surface(s) of the disk. This pattern is required by the disk drive to locate particular points on the disk, such as the starting point of a particular lesson.

Lesson "floppy" offers options to format a disk, or copy a router or lesson from a CYBER system offering PLATO services to a flexible disk. Lesson "floppy" offers the following general options.

- Format a disk.
- Initialize a disk directory (reuse a disk).
- Set or reset the router name.
- Set or reset disk "read" and "write" passwords.
- Copy up to 20 files from a CYBER system offering PLATO services to a flexible disk.
- Replace units within a lesson already loaded on a disk.
- See a list of files on a disk.
- Rename/create/destroy a file on a disk.
- See terminal/disk drive/Micro PLATO level information.
- Copy a disk from the primary drive to the secondary drive (published disks cannot be copied).
- Load lesson "floppy" into the terminal memory for the PLATO network.
- Load lesson "floppy" into the terminal memory from the flexible disk.
- Load lesson "floppy" to the disk.
- Copy a file between drives or within a drive.
- See the 10 most recent Micro PLATO execution errors for the primary or secondary drive.
- Select a Micro PLATO level.
- Offer the option to reinitialize the disk if the disk level is not compatible with the selected level.

USING DISK DUPLICATION SERVICES

Control Data offers a flexible disk copying service for customers preparing their own PLATO courses for Control Data microcomputers.

Diskette copies are requested using the Request for Micro PLATO Flexible Disk Copying Service form. These forms are available from sales representatives.

Customers should include two original diskettes (one master and one copy) for each set of duplicates requested. The diskettes and the completed form should be sent to:

Control Data Corporation
Software Manufacturing and Distribution, ARH230
4201 North Lexington Avenue
St. Paul, Minnesota 55112

To guard against damage during shipment, be sure to package disks securely. The requested number of copies will be returned in about 10 days.

USING MICRO PLATO LANGUAGE LESSONS ON A CYBER SYSTEM

Lessons written in the Micro PLATO Language are not restricted to microcomputer delivery. They can be used by students using terminals connected to a CYBER system offering PLATO services. A simple modification to the lesson directory is required to enable CYBER system execution and use over a network.

Authors select a mode of execution for their lessons, either "central" or "terminal". This selection is made in the file directory. To reach the option in the file directory:

1. Type the file name on the Author Mode (figure 4-2).
2. Choose block a, "directory", from the block listing display (figure 4-16).
3. Choose the "Micro PLATO Level" option (from figure 4-5a).

Choosing "central" will allow the lesson to be used on a CYBER system offering PLATO services. Choosing "terminal" will allow the lesson to be condensed and copied onto a flexible disk for delivery.

Some authors may choose to copy up to 15 units written in the Micro PLATO Language into the memory of an IST-II, IST-III or Viking terminal. These units can then be executed while connected to the CYBER system. A terminal can either alternate between executing a lesson on the CYBER system and executing a unit in the terminal memory, or it can execute both simultaneously. While executing both within the terminal and on the CYBER system, the system retains control of all terminal execution.

USING THE MICRO PLATO LANGUAGE

Although it has many similarities to the PLATO Author Language, the Micro PLATO Language has several unique attributes resulting from its design for use on flexible disks. These unique attributes include: the identification and distribution of new versions (levels) of the language and the meanings of security codewords. The following discussion is an overview of these attributes of the language.

For more detailed information on the Micro PLATO Language, refer to the AIDS "What PLATO feature" arrow (figure 4-8) and type "Micro PLATO Language".

Authors wishing to prepare lessons for delivery from a flexible disk will want to begin reading about the "ututor" command. Authors interested in down-loading units while executing on a CYBER system are referred to the "loadu" and "runu" commands in AIDS. Authors wishing to use a flexible disk and the CYBER system offering PLATO services simultaneously should refer to the "loadu", "runu", "attach", "datain", and "trap" commands.

MICRO PLATO LANGUAGE LEVELS

Providing software that offers stability, yet continues to allow the development of new capabilities, is the concept behind the various levels of the Micro PLATO Language.

A level is a defined set of commands and capabilities for the Micro PLATO Language.

Levels are introduced in one of two ways: as numbered levels, which are preserved (frozen) without changes; or as development levels, which change to incorporate new levels.

Once a level has been released, no changes will be made to that level to add new features that could affect the functioning or compatibility of lessons developed under it. Serious problems in a frozen level may be fixed. If this happens, you will be notified that you should recondense your disks.

Level 1 (available with Release 25), level 2 (available with Release 27), and Level 3 (available with Release 30) will continue in their present form until Control Data announces their discontinuance.

A new development level will be announced sometime after Release 30, scheduled for June of 1983.

Level Compatibility

The level of a lesson is set in the file directory. To select a new level, press DATA from the block listing display and choose the option, "Micro PLATO level". The level is set to level 1 by default unless the author chooses to change it to level 2 or 3.

Control Data's goal is for lessons to be upward compatible. That means a lesson developed under level 1, 2, or 3 can be changed to a development level by changing the setting in the lesson directory. No changes in the code are likely to be needed, although the lesson should be tested again since the correction of level 1, 2, or 3 errors in the development level may cause the lesson to run differently. The author could also insert new commands.

If the level of a lesson is changed to development, the lesson must be recondensed and copied onto a disk using the development level of lesson "floppy" or "mprouter". All lessons copied onto a disk must be of the same level. The reason for this is that the interpreter copied onto a flexible disk is designed to work with lessons of a specific level. It interprets the condensed form of the lessons and executes commands. Since only one interpreter can be copied onto a disk, the lessons must all be of the same level.

Choosing Capabilities

Users can choose when they want to take advantage of the capabilities available with new levels.

Unless the new capabilities are needed, users will find greater stability when using a numbered level. A numbered level would also allow the user to make minor corrections or changes to lessons on a disk in the future without having to make a new disk. Control Data will notify users in advance before older numbered levels are discontinued.

Users who want to use new features as soon as they become available could choose the development level. A development level interpreter and lesson could be used for the life of a flexible disk. Lessons on a development level can only be changed, however, during the release that made it available. Later changes would require recondensing the lessons and making a new disk using "floppy" or "mprouter".

Information about known errors, changes to the Micro PLATO Language, and various level warnings are available in AIDS. To reach AIDS, type "A" or "AIDS" at the Author Mode display. To reach a Micro PLATO Language command or feature, press MICRO and then type m for the micro symbol before typing the keyword. To reach the Micro PLATO Language index, type "μlevels".

FILE SECURITY USING THE MICRO PLATO LANGUAGE

Using the Micro PLATO Language, file security has two meanings. The traditional control of who can inspect or change the code within a given file remains the same. The additional control is over who can copy a file onto a flexible disk. No new codeword has been added for this purpose. Any author who knows either the change or inspect codeword of a file can copy it onto a flexible disk. Published lessons are subject to additional checks to prevent them from being copied onto flexible disks by anyone outside of specified Control Data groups.

Default codewords assigned to a file when it is created can be very general, and may allow access to all users on a system or all users within an account group. You should reevaluate these default codewords in light of this extended definition to ensure adequate file security.

SECTION 5

USING ACCOUNT OPTIONS

USING ACCOUNT OPTIONS

<p>Introduction 5-1</p> <p>General Account Information 5-1</p> <p>Using Your PLATO Account 5-3</p> <p style="padding-left: 20px;">Account Options 5-3</p> <p style="padding-left: 40px;">The Account Directory 5-5</p> <p>Maintaining Account Security 5-6</p> <p style="padding-left: 20px;">Using Security Codewords 5-6</p> <p style="padding-left: 20px;">Using an Account Access List 5-8</p> <p style="padding-left: 40px;">Creating an Account Access List 5-8</p> <p style="padding-left: 40px;">Registering Users in the Account Access List 5-9</p> <p style="padding-left: 40px;">Assigning Access Options 5-11</p> <p style="padding-left: 40px;">Keeping Access Lists Up-to-Date 5-11</p> <p style="padding-left: 40px;">Allowing/Disallowing System Access 5-12</p> <p>Maintaining File Security 5-12</p> <p style="padding-left: 20px;">Default Security Codes 5-12</p> <p style="padding-left: 20px;">Changing File Security 5-14</p> <p>Managing File Space 5-16</p> <p style="padding-left: 20px;">Creating Files 5-16</p> <p style="padding-left: 20px;">Destroying Files 5-17</p> <p style="padding-left: 20px;">Renaming Files 5-17</p> <p style="padding-left: 20px;">Making Another Copy of a File 5-17</p> <p style="padding-left: 20px;">Lengthening and Reorganizing Files 5-17</p> <p style="padding-left: 20px;">Shortening Files 5-18</p> <p style="padding-left: 20px;">Copying the Contents of a File 5-18</p> <p style="padding-left: 20px;">Changing General File Information 5-18</p> <p style="padding-left: 20px;">Inspecting File Information 5-20</p> <p>File Management Tools 5-20</p> <p style="padding-left: 20px;">Displaying File Information 5-21</p> <p style="padding-left: 40px;">Listing Files in Your Account 5-22</p>	<p style="padding-left: 20px;">Listing Archived Files in Your Account 5-22</p> <p style="padding-left: 20px;">Reviewing All File Operations 5-23</p> <p style="padding-left: 20px;">Inspecting File Data 5-24</p> <p style="padding-left: 20px;">Making a Leslist of Account Files 5-24</p> <p style="padding-left: 20px;">Listing the Last Editors of Files 5-25</p> <p>Listing Current Account Users 5-25</p> <p>Report Generator Options 5-25</p> <p>Group Records Report Generator Options 5-28</p> <p>Archiving Files 5-29</p> <p>Transmitting Files to CYBERNET Services 5-30</p> <p>Controlling Print Access 5-31</p> <p>Using Interaccount Options 5-32</p> <p>Using Network Options 5-32</p> <p style="padding-left: 20px;">Preparing to Use Network Features 5-32</p> <p style="padding-left: 40px;">Registering Users on Your System and Other Systems 5-36</p> <p style="padding-left: 40px;">Assigning User Access 5-37</p> <p>Intersystem File Security 5-38</p> <p style="padding-left: 20px;">Understanding Network Transfer Units (NTUs) 5-39</p> <p style="padding-left: 40px;">NTU Sizes and Priorities 5-39</p> <p style="padding-left: 40px;">NTU Accounting 5-39</p> <p style="padding-left: 40px;">NTU Controls 5-40</p> <p>Protecting PLATO Files 5-41</p> <p style="padding-left: 20px;">Installing Backups 5-41</p> <p style="padding-left: 20px;">How to Inspect Files for Damage 5-41</p> <p style="padding-left: 20px;">Requesting a Backup 5-41</p>
--	--

INTRODUCTION

This section defines account owner and account director responsibilities and describes how to use the PLATO features available to them.

The information in this section is presented in two parts. Each major topic gives a general overview, then gives specific information on how to use the features and options described. Authors and instructors who are not account owners or directors but who are interested in learning what account owners and directors do should read the general information sections. Authors and instructors who are account owners or directors should read all parts of this section.

GENERAL ACCOUNT INFORMATION

Your PLATO account defines and controls the PLATO resources your company, school, or organization purchased. It contains information on the number of people who can simultaneously use the system, and keeps a record of the number of disk parts* used to date.

There are several types of PLATO files.* Different file types are used to store different data. Although different files contain different data, most files are structured similarly. Each file contains a specific number of parts. Each part is capable of storing a specific amount of data. The number of parts in each file determines the length of the file. The file length (or number parts) is assigned when the file is created. There is, however, a maximum number of allowable parts for each file type. Table 5-1 lists the different types of PLATO files, their primary functions, and maximum allowable sizes.

All files created within the account are managed from within the account. For example, a group file created in an account would be a part of or belong to that account.

When an account is created, one person is assigned overall responsibility for control. This person is the account owner. He/she is the primary authority for the account and is responsible for communicating with Control Data to arrange any additional PLATO services for the account.

Account owners can choose to delegate or share responsibility for management of the account with other authors or instructors. Authors and instructors who share responsibility for the account with the account owner are called account directors. Account directors have access to the account and share joint responsibility for it with the account owner. There is very little difference in the options available to the account owner and the account directors. (Refer to Using an Account Access List later in this section for differences.)

An account owner's or director's responsibilities are account management. This involves: establishing and maintaining account security by controlling user access to the account; renaming, lengthening, and shortening files; and establishing local user rules for use of the account resources.

The remaining information in this section discusses why and how an account owner or director manages an account.

* A file is a finite set of data. The space within the computer system that stores this data is called disk parts. Disk parts are defined, finite subsets of a file. (Group records, notes files, lessons, and so on are examples of files.)

Table 5-1. File Types

File	Maximum Size	Function/Use
Lesson	18 parts	Stores PLATO Language code for PLATO lessons.
Router	10 parts	Controls lesson sequencing for all students in a group.
Group	63 parts	Contains collection of user records.
Personal Notes	63 parts	Stores personal communications among PLATO users.
Instructor	2 parts	Contains list of lessons and module descriptions for curricula using "mrouter".
Student Notes	18 parts	Stores communications between students and their instructors.
Student datafile	18 parts	Collects student data from students in a specific group or groups.
General Notes	18 parts	Stores notes on discussion of specific topics.
Dataset	63 parts	Stores large amounts of data.
Nameset	63 parts	Stores large amounts of data accessible by named sets of records.
Code	18 parts	Stores programming code other than PLATO Language code.
Docum entor	63 parts	Stores and organizes large amounts of text.
PLM group	63 parts	Contains PLM student sign-ons and student data.
PLM curriculum	37 parts	Contains PLM curriculum design information and management strategies.
PLM module	63 parts	Contains PLM learning objectives, test questions, learning resources, and scoring strategies for PLM curricula.

USING YOUR PLATO ACCOUNT

As an account owner or director, you can see information on your account and perform file management operations. These displays contain account and file security information, general account data; and account and file management options. The following paragraphs describe how to reach these locations and use the available options.

ACCOUNT OPTIONS

Account and file management options are reached from the display pictured in figure 5-1. From this display, you can choose to create and destroy PLATO files, see a list of all the files in your account, transfer files to other systems, see a list of users in the account who are currently using the system or generate reports. A total of 10 options can be listed on the display; however, not all accounts require all options. Only the options your account owner has requested appear on your display.

To reach your account options display, type the name of your account on the Author Mode display, or choose "Account transactions" on the PLATO Facilities display and press NEXT. Type the security code of the account (if required) and press NEXT.

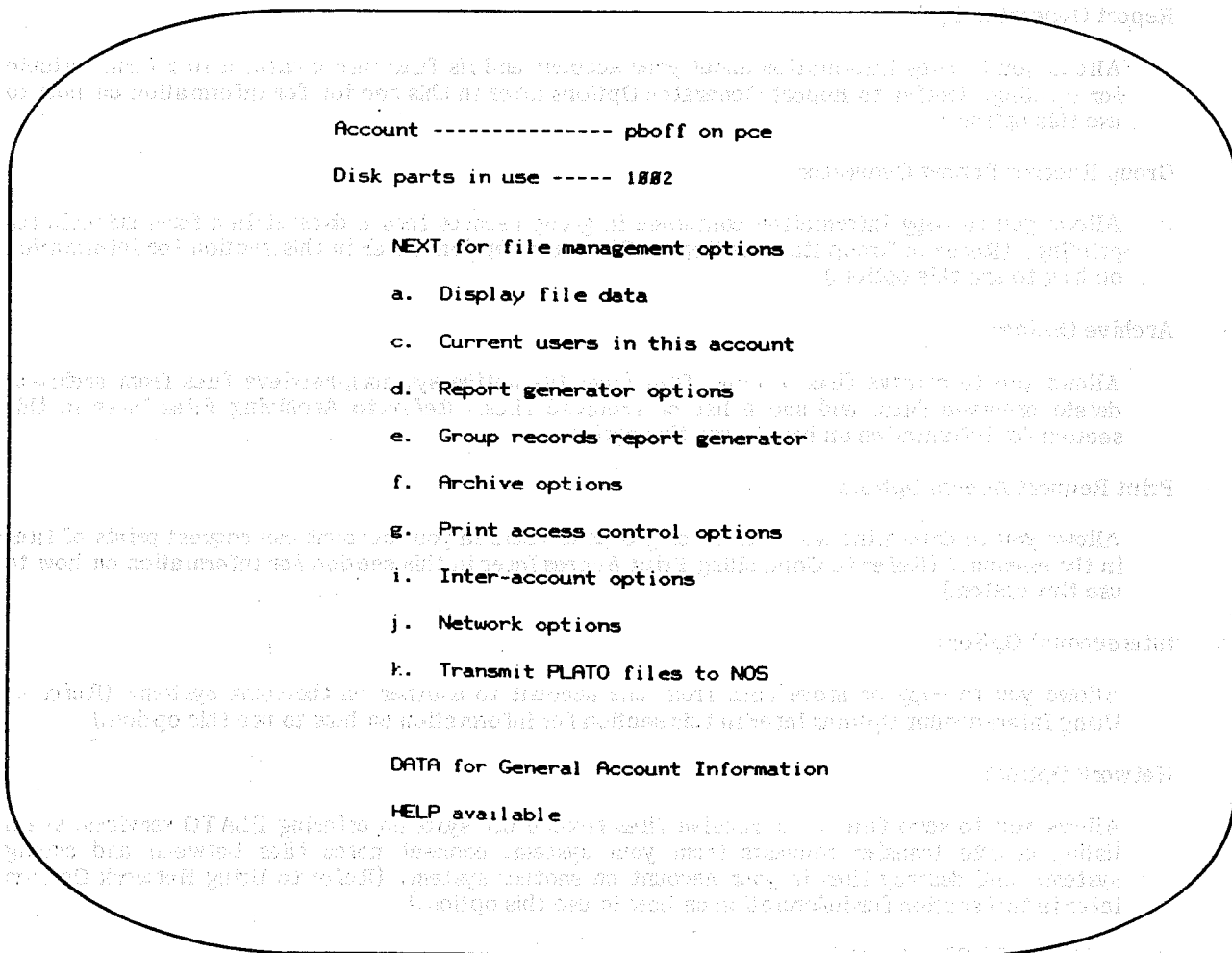


Figure 5-1. Account Options
A list of several account and file management options are listed on this display.

The options available on the account options display are:

File Management Options

Allows you to create, inspect, copy, and destroy files in your account. (Refer to Managing File Space later in this section for information on how to perform these file management operations.)

Display File Data

Allows you to see a list of all the files in your account, all files of a given type in your account, or the file operations performed; make a leslist of files in your account; and see which users last edited the account and what changes were made. (Refer to File Management Tools later in this section for information on how to use this option.)

Current Users in This Account

Allows you to see a list of people in your account who are currently using PLATO services on your system. (Refer to Listing Current Account Users later in this section for information on how to use this option.)

Report Generator Options

Allows you to copy information about your account and its files into a dataset in a form suitable for printing. (Refer to Report Generator Options later in this section for information on how to use this option.)

Group Records Report Generator

Allows you to copy information contained in group records into a dataset in a form suitable for printing. (Refer to Group Records Report Generator Options later in this section for information on how to use this option.)

Archive Options

Allows you to archive files (remove files from the active system), retrieve files from archives, delete archived files, and see a list of archived files. Refer to Archiving Files later in this section for information on how to use this option.

Print Request Access Options

Allows you to determine which users or groups of users in your account can request prints of files in the account. (Refer to Controlling Print Access later in this section for information on how to use this option.)

Interaccount Options

Allows you to copy or move files from one account to another on the same system. (Refer to Using Interaccount Options later in this section for information on how to use this option.)

Network Options

Allows you to send files to or receive files from other systems offering PLATO services, see a listing of file transfer requests from your system, connect notes files between and among systems, and destroy files in your account on another system. (Refer to Using Network Options later in this section for information on how to use this option.)

Transmit PLATO Files to NOS

Allows you to transmit (send) PLATO files to NOS files. This increases statistical analysis and report generation options. (Refer to Transmitting Files to CYBERNET Services later in this section for more information about transmitting PLATO files.)

THE ACCOUNT DIRECTORY

General and specific information about the account, as well as information about file security, is available from the display shown in figure 5-2. From this display, you can see the following kinds of information:

- The sign-on name and group of the account owner.
- The number of disk parts used by the account.
- The number of files and subscriptions (the number of users who can simultaneously use PLATO services) in the account.

```
Account ----- mktho on pce

Account Owner ---- greg witt / field

Disk parts remaining - 8
Disk parts allotted -- 488      HELP is available.
Files in account ---- 182
Subscriptions ----- 182

1. Inspect code ----- XXXXXXXXXXXX
2. Data change code ----- XXXXXXXXXXXX
3. File change code ----- XXXXXXXXXXXX
4. Access by system personnel -- ALLOWED
5. Account access list ----- This account file
   a. Lesson Notes File -----
   b. Default file change code ---- XXXXXXXXXXXX
   c. Default file inspect code --- XXXXXXXXXXXX
   d. Network log datafile ----- mkthosna
   e. Network alternate log file -- mkthosnb

Press the number or letter to change an item.
Press      DATA for lesson access classes for this account.
Press SHIFT-NEXT to inspect or edit the account access list.

Account last changed on 11/13/81 at 3:43:48 pm
by Jean Price / field at station 9-26
change account security code
```

Figure 5-2. The Account Directory
Account and file security codes are set from this account directory display. In addition, information about the account owner, disk part usage, and general information about files and subscriptions can be reached from this display.

This display also contains a list of options which allow account owners and directors to:

- Set and change file and account security using security codewords or an access list.
- Attach datafiles for recording networking operations information (if the account uses networking features).
- Determine whether or not to allow account access to system personnel.
- Specify a Lesson Notes file to collect student comments about newly created lessons in the account.

To see the above information about your account (refer to figure 5-2), type the name of your account on the Author Mode display, or choose the "Account transactions" option on the PLATO Facilities display and press NEXT. Type the account security codeword (if required) and press NEXT. A display similar to figure 5-1 appears. Press DATA to see figure 5-2.

MAINTAINING ACCOUNT SECURITY

Account owners and directors are responsible for maintaining the security of the account and the files within it. The account options and system features available to account owners and directors are powerful and can be damaging if misused by unauthorized or inexperienced users. It is important for account owners and directors to protect the security of the account by regulating access to it and controlling option use.

There are two types of security controls available for account owners and directors to protect their account and files from unauthorized use: codewords and an account access list. A combination of the two can also be used. Codewords and access lists regulate which users, other than the account owner, can access the account and which options are available to them. Each security control has several options to allow different levels of security. The type of security used for each account (codewords or access lists) depends upon the degree of security needed.

The following describes codewords and access lists and explains how and when to use them. (The access list information also describes how to use codewords within an access list.)

USING SECURITY CODEWORDS

Security codewords control who besides the account owner can access the account and determine the options available. For example, the account owner can set the security codewords so that only the account owner, only selected users, or only authors and instructors within a specified group can see and/or change the account and files.

An account has four types of security codes. These codes and their descriptions are:

No code	Restricts access to the account owner only.
Typed code	Requires all users to type a security codeword in order to see and/or change account information and files.
Group code	Allows all authors and instructors within a specified group to see and/or change account information and files (without typing a codeword).
Account codes	Allows all authors and instructors within a specified account to see and/or change account or file information (without typing a codeword).

All codeword settings are made on the display pictured in figure 5-2. The account owner is the only person who can initially set or change information on the display. This restriction prevents unauthorized users from changing security information and/or excluding the account owner from the account.

To reach figure 5-2, type the name of your account on the Author Mode display and press NEXT, or choose "Account transactions" on the PLATO Facilities display, and press NEXT. Type the security code (if required) and press NEXT. A display similar to figure 5-1 appears. Press DATA for the next display (figure 5-2). Information about each of the options on this display is available by pressing HELP.

To set security codewords, choose the option for which you want to set a codeword by typing the number in front of the option. Do one of the following, depending upon the type of code you want to use.

No code Press NEXT without entering anything at the arrow.

NOTE

The "No code" option is not available in all cases. Inspect, data and file change codes must exist in some form to provide minimum account security. NEXT pressed when setting these three options sets the code to "owner only".

Typed code

Type a codeword and press NEXT. A random number of X's appear to the right of the arrow as you type. You will be asked to retype the codeword to verify it (and help you remember it). Press NEXT.

NOTE

It is important to be creative when choosing codewords. Do not use obvious codes such as your spouse's name; the name of your group, account, or file; your pet's name; your password or telephone number; a period or a single keystroke, or other codes users can easily guess. Choose something with which only you can identify.

Group code

Press LAB. The system displays a "group" option and an "account" option. Type the number in front of the "group" option.

Account code

Press LAB. The system displays a "group" option and an "account" option. Type the number in front of the "account" option.

If the account director changes any of the account security codes for account inspect, data change, or file change, and the account has an access list, an informative message will be displayed immediately above the account inspect code saying "Access to this account is controlled by an access list." This is to aid persons trying to change access to their account who may not realize that the access list can override the account security code, even if the security code is "No code--owner only".

USING AN ACCOUNT ACCESS LIST

An account access list is used to control user access and to control the kinds of things those people can do within the account. It contains a list of systems, accounts, groups, and sign-ons of users who use the account, and a list of the options they are authorized to use. The account access list is created by the account owner. Each time a person attempts to use the account, the access list is checked. Only those persons authorized in the access list can use the account. Access is also restricted to only those options authorized for a given person.

The account owner is the only person who can create and initially insert information in the account access list. She/he is also the only person whose name does not have to appear in the list to see or change account information.

Account owners can delegate the authority to edit the account access list to account directors. However, account directors can never prohibit the account owner from editing the access list. Caution should be used in delegating responsibility as this allows other users to make major changes without the account owner's knowledge. The account owner, however, can never be prohibited from using the account. The account owner is the only person whose name is not required to appear in the account access list to use the account. This prevents others from illegally controlling the account. Because of this security measure and because an access list does not rely solely on codewords for security, account access lists can provide more effective account security.

Creating an Account Access List

To create an account access list, you must be the account owner. The following describe how to create an account access list.

1. On the Author Mode display, type the name of your account or choose "Account transactions" on the PLATO Facilities display, type the name of your account, then press NEXT. A display similar to figure 5-1 appears.
2. Press DATA.
3. Select "Account access list" by typing the number in front of the option. You will be asked to type the name of an account containing an access list. Do one of the following.
 - Press NEXT to create an access list in the account you are presently using.
 - Type the name of another account which contains an access list you want to use. (To use the access list of another account, you must also be the owner of that account. Using one access list for several accounts can increase account security by centralizing the authorizations to be maintained.) Press NEXT.

NOTE

Occasionally, when attempting to create an account access list, you might receive a message indicating there is not enough space in your account to add an access list. If this occurs, contact a PLATO consultant and ask him or her to lengthen your account to add space for the access list.

Registering Users in the Account Access List

Access can be assigned either to individual users (jane doe/school/pca) or to classes of users (author/library/pwa—all authors in group library; instructor/school/local—all instructors in account school on the local system). Users are identified in the access list either by name/group/system; user type/group/system; or by user type/account/system. In addition, all account and access lists contain a reference to Other/Other/Local. The Other/Other refers to all names, groups, accounts, and user types not specifically listed. The access assigned to Other/Other is NONE to ensure no access to persons not listed. (Local is a system designator; it refers to the system on which your account resides.)

The following steps describe how to register users in the account access list.

+NEXT

1. Press **SHIFT-NEXT** from the account directory display (refer to figure 5-2). You will see account access options (refer to figure 5-3).

File name: mktho
Block name: access
List for: accounts

Space left - 255

ACCESS OPTIONS

1. to see or edit access for people on same system as account (NEXT)
2. to see all listed signons
3. for special options
4. to see or edit access for people on another system

Press:	DATA	for access list information
	BACK	to exit (save changes)
	SHIFT-HELP	to exit (abort changes)
	HELP	for more information

Figure 5-3. Account Access Options

2. Do one of the following:

- To give access to users on your system, choose the option to see or edit access for people on the same system as the account.
- To assign access to users on a system other than the one you are using, choose to see or edit access for people on a different system. (Refer to Registering Users on Your System and Other Systems later in this section for more information on this option.)

3. Type the name of the group or account you want to add and press NEXT.

4. Type the name of someone in that group or account or type "A" or "I" to include all authors or all instructors, or type "O" to include all authors and all instructors. Press NEXT. A display similar to figure 5-4 appears.

Change access for: jean price / field / Local

Current access:

Director

- A. Director
- B. Director / Code
- C. File
- D. File / Code
- E. Data
- F. Data / Code
- G. Inspect
- H. Inspect / Code
- I. None

- 1. Inspect and Data Options
- 2. File Options
- 3. Special Options

Press a key to set access options

HELP available

Figure 5-4. Account Access Categories
This display allows you to control who uses the account and what they can do within it.

Assigning Access Options

There are approximately 20 options in the account access list. These options can either be assigned individually (that is, options a, b, c, and so on) to create a unique combination of options, or they can be assigned by category.

There are four option categories. These are preset combinations that provide different levels of account access.

The four available access categories and the authorizations associated with them are:

Director	Can use all account options and edit the access list.
File	Can do everything a user with director access can, except edit the access list.
Data	Can clear lesson use data, generate reports on files and groups, and see a list of users that are signed on.
Inspect	Can examine but not change information in the account.

You can choose various authorization combinations for specific users, in addition to these four levels. For example, it is not necessary to give a user complete file access; instead, you can authorize only certain operations. Or, a user can be authorized to lengthen or shorten, but not create or destroy files. (Any combination of authorizations other than the four main access levels is considered special access.)

All access is assigned from figure 5-4. This display lists three sets of authorizations which can be individually assigned and the four categories of options from which preset groups of authorizations can be assigned.

To assign an authorization category to a user, type the shifted letter in front of it. For example, to assign director access, type "A". To assign individual authorizations to a user, type the number in front of one of the three options ("inspect and data", "file", or "special") and then type the letter(s) in front of the option(s) you want to assign. Depending upon the combination of individual options you select, an access level is assigned, either one of the four option categories ("director", "file", "data", "inspect") or "special" access. The special category indicates you chose a unique set of options.

When using an account access list, only the options available to you will be listed.

Keeping Access Lists Up-to-Date

One of the special options available on the account access options display (figure 5-3) allows you to locate and delete obsolete entries from access lists. Obsolete entries are those groups, accounts, and sign-ons that either no longer exist, or have changed names.

To verify the existence of sign-ons, groups, and/or accounts, press SHIFT-NEXT from the account directory display (figure 5-2). You will see the access options display (figure 5-3). From this display, choose "Special Options". You will see a special options display from which you choose "verify existence of sign-ons in access list".

You have two options at this point. The first option, "Press NEXT to display all nonexistent entries" will search for obsolete sign-ons, groups, or accounts. If no obsolete entries are found, you will see the message "Verification complete". If obsolete entries are found you will see them.

The second option, "SHIFT-HELP to delete all missing entries automatically" will delete all obsolete entries. When the process is complete you will see the message, "Verification completed".

Once you have completed the up-date, you may return to figure 5-3 by pressing BACK.

ALLOWING/DISALLOWING SYSTEM ACCESS

One of the security options available on the account directory display (figure 5-2), which contains general account information, is to allow system personnel access to your account. Operations personnel occasionally need access to accounts and files to check for errors if hardware problems have occurred.

If you choose to allow operations personnel access to your account, authorized users can enter the account in inspect mode without typing a security code or appearing in the account access list. While in inspect mode, they have the same options and restrictions as any user with inspect access. Their access to the account is recorded and appears in the account log.

If you choose to restrict system personnel from entering the account, they may not use the account unless they type one of the account security codes or they are listed in the account access list.

Certain file operations, however, occasionally require that files in the account be manipulated by system personnel, regardless of the access setting. These operations always appear in the account log and are always listed as the last action for the account. This ensures that the system personnel access is seen the next time the account is entered by an account owner or director or by a user with the file or data change code. Examples of occasions when system personnel might use your account are during an emergency caused by a system error or file conversion.

To allow or restrict system personnel access to your account, type the number in front of "Access by system personnel" on the account directory display (figure 5-2). To allow system personnel access, type the number in front of the option. To change the access setting, type the number again.

MAINTAINING FILE SECURITY

Account owners and directors are responsible for maintaining the security of all account files. This responsibility is usually shared with other authors and instructors in the account. When a file is created, the person who created it is responsible for its initial security. The author or instructor for whom the file was created becomes responsible for maintaining the security of that file. The account director, however, still maintains ultimate control over the file in that he/she can access any file in the account (with the exception of Personal and General Notes files) without knowing the security codes.

DEFAULT SECURITY CODES

As an account director, you can secure all new files in your account with default file codes. Default file codes are automatically assigned to all files in the account. These security codewords remain until the author or instructor for whom the file was created accesses the file and assigns new codewords. Assigning default file codewords prevents unauthorized users from easily using your files.

There are two types of default file codes: inspect codes and change codes. The inspect code allows users to inspect but not change information in files. The change code allows users to see and change information in files. Default security codes are assigned by the account owner or director. These codes, however, should be changed in the file by the major file users. Default codes are intended to provide minimal, short-term security.

The default security options are located on the account directory display (figure 5-2). The following describes how to set each of these codes.

To set a default inspect or change code, do the following.

1. Choose the "Default file inspect code" option by typing the letter in front of it from the account directory display (figure 5-2).
2. Do one of the following, depending upon the security code you want to set.
 - Type a codeword and press NEXT to set a typed code. Retype the word to verify it and help you remember it. Press NEXT.
 - Press LAB, type the number in front of the "group" option. Press NEXT alone for your own group, or type the name of the desired group and press NEXT.
 - Press LAB, type the number in front of the "account" option. Press NEXT alone for your own account, or type the name of the desired account and press NEXT.
 - Press LAB and type the number in front of the "unmatchable code" option.
 - Press NEXT to set a blank code (open to all users).

NOTE

A blank code cannot be assigned to the default file change code. If neither a typed, group, account, or unmatchable code is assigned, an account code is automatically assigned.

If a blank code is assigned, all files except group files, General Notes files, and Personal Notes files are open to all authors and instructors. (Notes files do not have security codes.)

Group inspect codes are not allowed to be blank because student progress data is privileged information. When no default inspect code exists, the default change code is also assigned as the inspect code.

For more information on the default code options, press HELP from the account directory display (figure 5-2).

CHANGING FILE SECURITY

As an account director, you can change the security codes of any file in your account. This allows you to retain control of your account, regardless of the file security settings.

File security codes can be changed within the file itself or through the account. To change file security through the account use the file management options, and do the following.

1. Press NEXT from figure 5-1 to see a list of file management options (refer to figure 5-5).

```
Account ----- mktho on pce
Files in account ----- 182
Disk parts allotted --- 488
Disk parts remaining -- 8

File management options: >

1. Create a file
2. Destroy a file
3. Re-name a file
4. Make another copy of a file
5. Lengthen or reorganize* a file
6. Shorten a file
7. Copy contents of a file
8. Change security/access/lesson notes file/group type
9. Inspect file information

*Press HELP for information
  about file reorganization.
```

Figure 5-5. File Management Options
From this display you can perform several file management tasks.

2. Choose to "Change security/access/lesson notes file/group type".
3. On the new display, type the name of the file for which you want to change security. Press NEXT. You will see a list of security options related to the type of file entered.
4. Type the letter in front of the option you want to change.
5. Do one of the following, depending upon the type of code you want to set.
 - Type a codeword and press NEXT to set a typed code. Retype it to verify it (and help you remember it). Press NEXT.
 - Press LAB and type the number in front of either the "group" or "account" code option to set a group or account code.
 - Press LAB and type the number in front of the "unmatchable code" option to set an unmatchable code.
 - Press DATA, type the name of the file from which you want to copy information, and press NEXT to copy security codes from another file. (The file being copied from must be the same file type.)
 - Press NEXT to set a blank code (open to all users).

NOTE

If a blank code is assigned, all files except group files, Personal Notes files, and General Notes files are open to all authors and instructors for inspection. Group inspect codes can not be blank because student progress data is privileged information. When no default inspect code exists, the default change code is also assigned as the inspect code. (Personal Notes files and General Notes files do not use security codes.) The group change code can be assigned a blank code, but this is not recommended.

MANAGING FILE SPACE

As an account owner or director, you are responsible for managing the use of file space in your account. This involves creating files, changing file lengths, and monitoring the use of files by account users.

File space is measured in disk parts. The account displays in the account directory a running record of the number of disk parts used to date (figure 5-2). Periodically the account owner or director needs to review account file usage. You can do this review using the file management tools available to account directors. These management tools help you determine which files are not being used, whether the lengths of the files are proportionate to the needs of the users, and whether or not there are abandoned files in the account.

Wasted disk parts can be recycled by destroying unused files. Destroying a file deletes the file from the system and destroys the data stored in it.

File management tools are presented in figure 5-5. To reach this display, do one of the following.

- | | |
|-------------|--|
| Authors | Type the name of your account on the Author Mode display and press SHIFT-NEXT. |
| Instructors | Choose the "Account transactions" option on the PLATO Facilities display, type the name of your account, and press SHIFT-NEXT. |

The following sections describe the file management options and how to use them.

CREATING FILES

This option creates files in your account. If you are creating a file for another user, you should obtain the following information before creating the file:

- Type of file needed (lesson, dataset, nameset, and so on).
- File name (group name for Personal Notes files).
- Number of disk parts needed.
- Record size (for datasets and namesets).
- Name size (for namesets).

The following steps describe how to create a file from the display in figure 5-5.

1. Choose to "Create a file".
2. Type the letter in front of the type of file you want to create.
3. Enter a name for the file (group name for Personal Notes). Press NEXT.
4. Respond to the questions.
5. Inform the user for whom the file was created of its availability.

DESTROYING FILES

This option destroys files in your account. Destroying files is a powerful operation that should only be done when you are absolutely sure the file is not being used. Many account directors contact the author or last editor of a file before destroying it to make sure the file is not needed.

The following steps describe how to destroy a file from the display in figure 5-5.

1. Choose to "Destroy a file".
2. Type the name of the file you want to destroy.
3. Press SHIFT-HELP to destroy the file.

RENAMING FILES

This option allows you to change the name of any file in your account.

The following steps describe how to rename a file from the display in figure 5-5.

1. Choose to "Rename a file".
2. Type the current name of the file you want to change. Press NEXT.
3. Type the new file name. Press NEXT.

MAKING ANOTHER COPY OF A FILE

This option allows you to make an exact copy of an existing file, including the file directory.

The following steps describe how to copy a file from the display in figure 5-5.

1. Choose to "Make another copy of a file".
2. Type the name of the existing file which contains the information you want to copy. Press NEXT.
3. Type the name of the file to which you want the information copied. The name must be changed by one character to make a copy. Press NEXT.

LENGTHENING AND REORGANIZING FILES

This option allows you to increase the number of parts in a file, to change the record size of a dataset, or the number of names or name size of a nameset.

The following steps describe how to lengthen files from the display in figure 5-5.

1. Choose to "Lengthen or reorganize files". Press HELP for information on reorganizing files.
2. Type the name of the file to be lengthened. Press NEXT.
3. Type the number of parts, records, or names to add. Press NEXT.

NOTE

For certain file types, there will be other questions to be answered.

SHORTENING FILES

This option allows you to decrease the number of parts or records in a file.

The following steps describe how to shorten a file from the display in figure 5-5.

1. Choose to "Shorten a file".
2. Type the name of the file you want to shorten. Press NEXT.
3. Type the number of parts, records, or names to be removed. Press NEXT.

COPYING THE CONTENTS OF A FILE

This option allows you to copy the contents of most existing file types (with the exceptions of groups, datafiles, Personal Notes, and accounts) into another file that is identical to the existing file with regard to file type, file size (number of parts), record size (for datasets and namesets), and name size (for namesets).

The following steps describe how to copy the contents of a file from the display in figure 5-5.

1. Choose to "Copy contents of a file".
2. Type the name of the file from which information is to be copied. Press NEXT.
3. Type the name of the file in which the information is to be stored. The name must be changed by one character to make a copy. Press NEXT.
4. You will see the specified copy operation. Verify that it is what you have intended. Press SHIFT-HELP to copy file contents.

CHANGING GENERAL FILE INFORMATION

This option allows you to change the security of any file in your account. You can also change Lesson Notes files; access list file owners, and privacy flags of General Notes files; and the type of group (author/nonauthor) if your account has author groups. This option also allows you to change the owner of any custom access list in a lesson in the account.

The following steps describe how to change a file's access list, Lesson Notes file, and group information from the display containing file management options (refer to figure 5-5). (Refer to Changing File Security earlier in this section for information on how to change a file's security settings.)

1. Choose to "Change security/access/lesson notes file/group type".
2. Do one of the following, depending upon the type of information you want to see.
 - Type the name of a file that contains information you want to change. Press NEXT. You will see a list of attached files and security options related to the type of file entered. Go to step 4.
 - Press NEXT to see the first file in the account. You will see a list of attached files and security options related to the type of file entered. Go to step 4.

- Press SHIFT-NEXT to enter the name of a leslist that contains the names of files whose security codes or Lesson Notes files are to be changed. The leslist must contain the names of files to be changed and all must be of the same type (lesson files and router files can be intermixed, as well as namesets and datasets).

p 5-21

You will see a list of security options for the type of file in the leslist. From this list, you can set the security codes to be the same for all files listed in the leslist. For example, if you want all your files (in the leslist) to have "secure" as the inspect code, you would choose the "To inspect lesson" option, type secure, and press NEXT. Then press SHIFT-NEXT to make the change on all files.

From this same list, you can also set (or change) a Lesson Notes file to be attached to all or selected files in the leslist.

After you choose the "Lesson notes file" option, type the name of a notes file that you want attached to the files in your leslist, and press NEXT. You will see an "Old note file" option with "any" written beside it. If you leave the "Old note file" option set to "any," all files in your leslist will be changed to have the new notes file attached to them.

If, however, you don't want to assign the same Lesson Notes file to all lessons in the leslist, another option is available to you. You may specify the replacement of a given notes file with a new Lesson Notes file. To do this, type the name of the Lesson Notes file to be replaced at the "Old note file" option and press NEXT. Then press SHIFT-NEXT to make the change.

Press HELP for more information on how to use a leslist.

3. Type the letter in front of the option you want to change.

4. Type the new information and press NEXT.

5. Do one of the following steps:

- Press NEXT to enter another file name.
- Press + to see the next file in the account.
- Press SHIFT + to see the next file of the same type.
- Press - to see the previous file in the account.
- Press SHIFT - to see the previous file of the same type.
- Press BACK for other options.

INSPECTING FILE INFORMATION

This option allows you to see the author, lesson, and security information of any file in your account. The following steps describe how to see file information from the display in figure 5-5.

1. Choose to "Inspect file information."
2. Either type the name of the file you want to inspect and press NEXT, or press NEXT (alone) for the first file in the account. You will see information on that file.

NOTE

Typed security codes are displayed as a line of *'s;
the actual security codes cannot be displayed.

3. Do one of the following steps.
 - Press NEXT to enter another file name.
 - Press + to see the next file in the account.
 - Press SHIFT + to see the next file of the same type.
 - Press - to see the previous file in the account.
 - Press SHIFT - to see the previous file of the same type.
 - Press BACK for other options.

FILE MANAGEMENT TOOLS

As an account owner or director, you are responsible for managing the use of disk parts in your account. Files that are inactive or abandoned should be destroyed so the disk parts can be recycled or allocated to other users.

There are several file management tools that can help you determine the status of the files in your account, that is, which files are active (frequently used) and which files should be destroyed. These file management tools are reached from the account options display (refer to figure 5-1). The options on this display allow you to:

- See a list of all the files in your account with specific information about each file (security information, file owner, associated files, date file created).
- See a list of the users in your account who are currently using PLATO services.
- Collect data about users accessing and editing the account and the changes they made.
- Use networking features to copy and destroy files in accounts on other systems offering PLATO services.
- Control which accounts and groups can request prints of files in the account.

To reach the file management tools, type the name of your account on the Author Mode display or, on the PLATO Facilities display choose "Account transactions" and press NEXT. The following paragraphs describe the options available from this display.

DISPLAYING FILE INFORMATION

Using the "Display file data" option, you can request to see detailed information about the files in your account. You can see a complete list of the files in your account, as well as other file data that may be useful to determine which files are frequently used and which files should be destroyed.

The following paragraphs describe the options available on the display in figure 5-6.

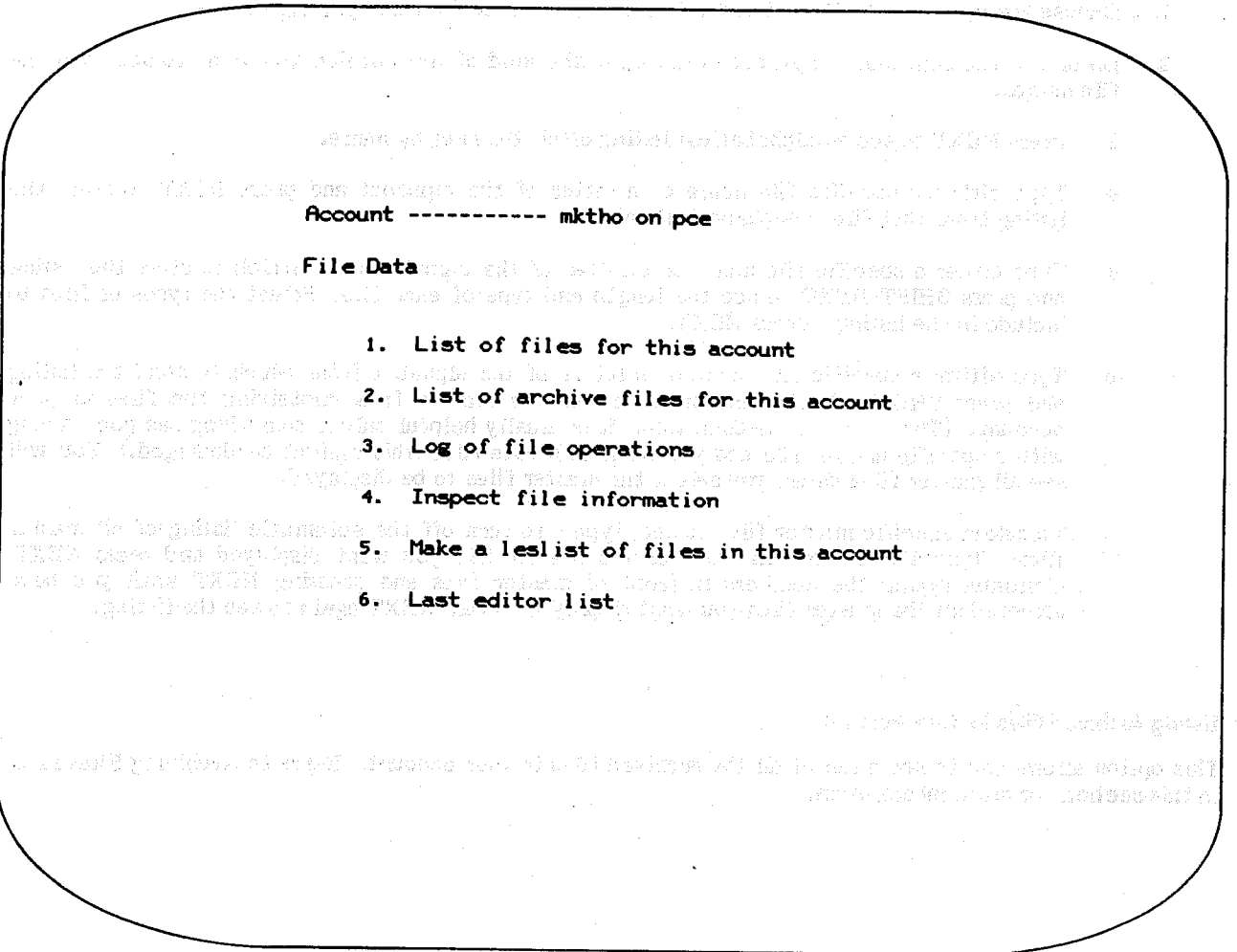


Figure 5-6. File Data

This display allows you to see detailed information about the files in your account.

Listing Files in Your Account

This option allows you to see a list of all the files in your account, as well as information on the type and length of the files and the name of the master file on which each file resides. A master file is a Network Operating System (NOS) file that contains a collection of PLATO files.

The following steps describe how to use this option.

1. Choose the option to "List of files for this account" from the display in figure 5-6.
2. Do one of the following steps, depending upon the kind of information you want to see with the file names.
 - Press NEXT to see an alphabetical listing of all the files by name.
 - Type either a specific file name or a letter of the alphabet and press NEXT to start the listing from that file or alphabetical point.
 - Type either a specific file name or a letter of the alphabet from which to start the listing and press SHIFT-NEXT to see the length and type of each file. Select the types of files to include in the listing. Press NEXT.
 - Type either a specific file name or a letter of the alphabet from which to start the listing and press SHIFT-LAB to see the name of the master files containing the files in your account. (This option is seldom used. It is usually helpful only if something has gone wrong with a specific master file and you want to locate files which might be damaged.) You will see all master files unless you select the master files to be displayed.

To select specific master files to see, type - to turn off the automatic listing of all master files. Type the number in front of the master file you want displayed and press NEXT. Continue typing the numbers in front of master files and pressing NEXT until you have selected all the master files you want displayed. Press NEXT again to see the listing.

Listing Archived Files in Your Account

This option allows you to see a list of all the archived files in your account. Refer to Archiving Files later in this section for more information.

Reviewing All File Operations

This option allows you to see a list of the file operations (create, destroy, and rename files; change codewords; and so on) performed on files in the account. The list contains the date, time, file action performed, sign-on name of the person who performed each file operation, and the name of each file changed. It also reports operations on the account itself, such as editing the account access list, changing the number of disk parts allocated, and so on.

The following steps describe how to use this option.

1. Choose "Log of file operations" from the display in figure 5-6.
2. Do one of the following steps, depending upon the kind of information you want to see.
 - Press SHIFT-NEXT to see a log of file actions for all files in your account. Go to step 3.
 - Press NEXT to select specific files, users, or groups on which to see file action information. Do either or both of the following steps.
 - Type the name of a file or an alphabetical character from which to start the listing. Press NEXT.
 - Press NEXT to either see a list of file actions for all users in the account, or to type the name of an individual user and/or group and see a list of that user's or group's file actions. Press NEXT.
3. Select the time frame from which to compile the list by typing the letter in front of one of the following options.

Current log	Lists the most recent file actions.
Previous log	Lists the second most recent file actions.
Oldest log	Lists the oldest file actions.
4. Press HELP for more information on this option.

Inspecting File Data

This option allows you to see general information about a file. The information displayed includes author information, security codeword settings, lesson information, and associated files.

The following steps describe how to use this option.

1. Choose "Inspect file information" from the display in figure 5-6.
2. Press NEXT to see information on the first file in the account, or type the name of a specific file you want to inspect and press NEXT. You will see information on that file.

NOTE

When a security code exists, you see a line of *'s.

3. Do one of the following steps.
 - Press NEXT to enter another file name.
 - Press + to see the next file in the account.
 - Press SHIFT + to see the next file of the same type.
 - Press - to see the previous file in the account.
 - Press SHIFT - to see the previous file of the same type.
 - Press BACK for other options.

Making a Leslist of Account Files

This option allows you to store the names of all the files in your account in a leslist. To use this option, you must have a lesson that contains a leslist block.

The following steps describe how to use this option.

1. Choose to "Make a leslist of files" from the display in figure 5-6.
2. Type the name of the lesson containing the leslist block you want to use. Press NEXT.
3. Type the name of the leslist block you want to use. Press NEXT.
4. Type either "y" to delete all current data in the leslist, or type "n" to keep the data.
5. Do one of the following steps, depending upon the type of information you want to list in the leslist.
 - Press NEXT to list all files in the account.
 - Press SHIFT-NEXT to select the type(s) of files to list. Select file types by typing the letter in front of the file type you want to list. (All file types are automatically listed as selected until you change them. Type - to turn off all selections and make your own.) Press NEXT when finished.

Listing the Last Editors of Files

This option allows you to see a list of users who last edited files in the account. To use this option, you should have a one-part dataset (having 320 words per record) in which to store the information. (Refer to **Creating Files** earlier in this section to learn how to create a dataset file.) More information on this option is available by pressing **HELP**.

The following steps describe how to use this option.

1. Choose to "Last editor list" from the display in figure 5-6.
2. Do one of the following steps.
 - Press **DATA** to compile a new list or to update the current one.
 - Press **NEXT** to see the information already stored in the dataset.
3. Type the name of the dataset with which you want to work. Press **NEXT**.

LISTING CURRENT ACCOUNT USERS

The "Listing current account users" option allows you to see a list of the users in your account who are currently using **PLATO** services on your system.

To see this information, type the letter in front of "Current users in this account" on the account options display (refer to figure 5-1).

REPORT GENERATOR OPTIONS

The "Report generator" option on the account options display (figure 5-1) allows you to copy information about your account and its files into a dataset file in a form suitable for printing. The kind of information you can copy from your account includes:

- A list of files in your account.
- A log of file operations.
- The names of the last editors of files.

To use the "Report generator" option, you must have a dataset file to store the copied information. The length of the dataset depends upon the amount of information you want to copy; however, a 320-word per record, one-part dataset is usually sufficient. When creating the dataset, a typed code must be used. (Refer to **Creating Files** earlier in this section to learn how to create a dataset. Refer to **Understanding File Structure and Use** in section 4 for an introduction to **PLATO** file structure. Refer to **Dataset Files** in section 4.)

The following steps describe how to use the report generator to copy account information into a dataset file.

1. Choose "Report generator" from the account options display (figure 5-1) by typing the letter in front of it.
2. Type the name of the dataset file in which the information can be stored. Press **NEXT**.
3. Type the write codeword for the dataset (if required). Press **NEXT**.

4. Type the record number of the first record in which you want the data stored and press NEXT.
5. Select the paper width for the data to be printed on (type "n" for business-sized paper, "w" for traditional computer paper). Press NEXT. You will see four print options.
6. Select an option.

- "Print list of files in account" displays the following four options:
 - Print file names only.
 - Print list of files with file types.
 - Print list of files with file types and last editor.
 - Print list of files with file types and descriptions. (If a description has not been entered, the report will only contain the file name and type.)
- The "Print account log" option displays the different logs to choose from:
 - Current
 - Previous
 - Next older
 - Next older
 - Oldest

Type the letter in front of the log you want to print. After you select a log, type + or SHIFT + to advance the timeframe, or type - or SHIFT - to reverse it. Type the letter in front of the date and time at which you want the listing to begin.

- "Print network operations log" generates a report of the network operations log. This option is available to any account that has the capability of using networking features, such as transferring files or nameset records to another system. Two reports are available: one of the current log, which contains the most recent networking activities for the account; and one of the previous log.
 - "Print list of archived files" generates a list of all files archived from the account.
7. After processing is complete, the options (in step 6) appear again with a new choice: "Terminate dataset and exit". Choose this option to ensure the dataset is correctly detached and to prevent extraneous information from appearing in the print.

NOTE

If the dataset fills up during processing, you are asked to enter the name of another dataset in which to continue processing. If there is no other suitable dataset available, press BACK to terminate processing of the report.

You can get a print of the information in the dataset one of two ways.

- If you have a printer attached to your terminal, type "print" on the Author Mode display and press DATA, or choose the "Request a print" option on the PLATO Facilities display. Choose the "Print using a printer attached to your terminal" option and follow the display instructions. (Refer to Requesting Prints in section 4 for more specific information.)

- If you do not have a printer attached to your terminal, you will need to request a print from the PLATO service center. But before you do so, you must enter your name and mailing address and printing instructions in the dataset file (refer to figure 5-7). To reach this display:
 - Enter the dataset name on the Author Mode display or from the "Choose a lesson" option on the PLATO Facilities display.
 - Press DATA.
 - Choose "Author information" and type your name, address, and printing instructions. Type the instruction "special" at the "Printing directives" option.
 - Press HELP for more information.

Refer to Requesting Prints in section 4 for specific information on requesting prints from the PLATO service center.

Dataset name --- jeanset
Account ----- mktgrps

Press the associated number to change an entry.

FILE INFORMATION:

1. ann fehner
2. 412 Ivy Lane, Yourtown, Maine 82837

PRINTING DIRECTIVES:

3. special

HELP Available

Figure 5-7. Author Information
To receive a print of a dataset file from the PLATO service center, you must fill out the information on this display.

GROUP RECORDS REPORT GENERATOR OPTIONS

The "Group records report generator" on the account options display (figure 5-1) allows you to copy information about groups within your account into a dataset file in a form suitable for printing. The kind of information you can copy includes:

- Group rosters.
- Group statistics.
- Student and router variables.
- Group directories.

To use the group records report generator, you must have a dataset in which to store the copied information. The length of the dataset depends upon the amount of information you want to copy; however, a 320-word per record, one-part dataset is usually sufficient. (Refer to Creating Files earlier in this section to learn how to create a dataset.)

The following steps describe how to use the group records report generator to copy group file information into a dataset file.

1. Choose "Group records report generator" from figure 5-1.
2. Type the name of the dataset file in which the information can be stored. Press NEXT.
3. Type the write codeword for the dataset (if required). Press NEXT.
4. Type the record number of the first record in which you want the data to be stored and press NEXT; or press NEXT to store data beginning in the first record of the dataset.
5. Press SHIFT-HELP to clear (zero) the records, or press NEXT if they are already cleared (zeroed) of if you are going to store data in records not previously used. You will see a list of group file print options.
6. Select the option you want printed by typing the letter in front of the option. Press HELP for an explanation of the options.

You can get a print of the information in the dataset one of two ways.

- If you have a printer attached to your terminal, type print on the Author Mode display and press DATA, or choose to "Request a print" on the PLATO Facilities display. Choose to "Print using a printer attached to your terminal" and follow the display instructions. (Refer to Requesting Prints in section 4 for more specific information.)
- If you do not have a printer attached to your terminal, you will need to request a print from the PLATO service center. But before you do so, you must enter your name and mailing address and printing instructions in the dataset file (refer to figure 5-7). To reach this display:
 - Enter the dataset name on the Author Mode display and press NEXT.
 - Press DATA.
 - Choose "Author information" and type your name, address, and printing instructions. Type the instruction "special" at the "Printing directives" option.
 - Press HELP for more information.

Refer to Requesting Prints in section 4 for specific information on requesting prints from the PLATO service center.

ARCHIVING FILES

To archive a file is to place it in secure storage, saving it for future reference or revision. Available from domestic PLATO service centers, this feature provides an economical way to preserve files and data off-line. Valuable on-line file space can be put to other uses.

Files can be stored for up to two years, and they may be retrieved and used at any time during this period. At the end of two years, the files will be automatically deleted unless they are retrieved and rearchived for another two years.

Student records in a group file can be archived. Should a question arise about these records at a later time, the archives could provide the answer. Archiving provides a handy way to store the code of lessons being delivered on flexible disks. Following development, the files containing the code on the PLATO network can be stored until needed for future course revision.

Any infrequently used file can be archived at a savings over the cost of additional on-line file space. The actual break-even point may be two months or a little longer. Retrieved files will automatically be converted to the present PLATO software level.

To archive a file, simply follow these steps:

1. From the main option display in your PLATO account, select "Archive options".
2. Two archive options will be displayed: "List of archived files with the option to retrieve or destroy archived files", and "Archive a file". Select "Archive a file".
3. Type the name of the file you want to archive, and press NEXT. You will be given the choice of saving or deleting the on-line copy of the file being archived.

Follow these steps to retrieve a file:

1. Select "Archive options" from the main option display in your account.
2. Select the option, "List of archived files, with the option to retrieve or destroy archived files".
3. To see a numbered list of archived files in your account, press the NEXT key (hold the SHIFT key and press NEXT to see additional information, such as the file length and type, and the date each was archived).
4. Upon seeing the list, press the DATA key.
5. Type the number beside the file you want retrieved. Press NEXT and enter a name for the file to assume on-line. The file should be on-line again in about a day.

TRANSMITTING FILES TO CYBERNET SERVICES

The Transmit service sends PLATO files to CYBERNET and converts the information they contain to a format compatible with CYBERNET applications and high-level languages. Then, CYBERNET applications can be used to restructure and analyze that information to generate databases and reports.

The Transmit service:

- Collects training information in a single file (database).
- Reduces cost and adds flexibility in developing customized training reports.
- Makes existing CYBERNET statistical and information processing applications available to PLATO users.
- Takes advantage of the ASCII* capabilities of the IST-III and Viking terminals to serve CYBERNET as well as PLATO applications.
- Permits batch processing (processing a large amount of data without remaining signed on to CYBERNET services).

A sample application: A company could build a composite training history for all employees with completion dates and learning profiles.

Professional Services consulting is available to help customers set up instructions and data processing applications. Customers knowledgeable in business data processing may set up their own procedures.

Customers using Transmit will also need a CYBERNET Services contract.

The service is available only on the PEA system, which is able to send files to the KBL CYBERNET system. Domestic PLATO customers can gain access to PEA to use the Transmit service.

The Transmit service can be used to send information from PLM and "mrouter" group files, PLM curriculum files, PLM module and student data files and instructor files to CYBERNET. The service does not send information stored in nameset or dataset files.

The service can be used with published courses, as well as with proprietary customer files.

You may read complete details about using the Transmit feature by reading documentor file "transmit". To do this, type "transmit" at the Author Mode display and press NEXT.

* Refer to the glossary for a definition of ASCII

CONTROLLING PRINT ACCESS

Requesting prints from the PLATO service center is a service only some accounts request. To use this feature, account owners should contact a Control Data sales representative and request that the print feature be enabled in their accounts. After the account is given print access, the account owner should create a print request access list to control which users in the account can use the feature.

A print request access list contains the names of groups in the account, as well as the names of individual users and their print request access. The account owner is responsible for creating and maintaining this access list. When a user requests a print, the access list is checked to determine whether that user has access. Users who have been granted access can use the feature; those who are restricted cannot.

The following steps describe how to create a print request access list.

1. Choose "Print access control" from the display in figure 5-1. You will see the Print Requests display.
2. Do one of the following steps. Press HELP for more information on these options.
 - Press NEXT to create or change your access list. (This option allows you to register groups and individual users within the groups to use the print request feature. You can also change an existing access list and restrict specific users from accessing the feature.) The following describes how to create and change an access list.
 - Type the name of a group to which you want to allow access. Press NEXT to add or change; or press SHIFT-HELP to delete. You will see the access list for that group.
 - Either type the name of an individual user in the group to which you want to assign access, or type "other" to assign or restrict access to all users or specific users in the group. Press NEXT. You will see the user's access status.
 - Type either "mr" (may request) to allow that user access or "no" (none) to restrict access to that user.
 - Press DATA to test an individual user's access status and make sure the access assigned is as you intended. Type the name of the user whose access status you want to see and press NEXT. Type the user's group and press NEXT. You will see the user's access status.
 - Press LAB to remove the access settings of all users in the access list and create a new list.

USING INTERACCOUNT OPTIONS

The interaccount options allow you to move and/or copy files between accounts on the same system. When you move a file between accounts, the copy of the file in the original account is deleted. When a group is moved, any Personal Notes files associated with the group will also be moved. This ensures that a group and its Personal Notes file will always be in the same account.

When you copy a file between accounts, the original file remains in the original account.

To move or copy files, choose the "Interaccount" option from the account options display (refer to figure 5-1) and follow the instructions.

USING NETWORK OPTIONS

The networking features allow users to perform file operations between accounts on multiple systems offering PLATO services. These features are tools for users whose accounts are spread across more than one system and for users who would like to engage in cooperative efforts with people on different systems. The options associated with the networking features allow users to copy files between accounts on different systems, destroy files on other systems, see logs of attempted and completed intersystem file operations, and connect notes files between systems.

PREPARING TO USE NETWORK FEATURES

Before the networking features can be used, the account owner should determine whether or not the features have been enabled in the account, and then prepare the account to use the features. Currently, PLATO operations personnel enable the networking features in an account. When the features are enabled, two additional options appear on the account directory (refer to figure 5-8). These options are: "Network log datafile" and "Network alternate log file". If these options do not appear in the account directory, the networking features have not been enabled in the account. The account owner should contact a Control Data sales representative and request to have the networking features enabled in the account. These additional options require the account owner to enter the names of two student datafiles which are used to record all attempted and completed network file operations requested from an account. These options must be accessed and the appropriate information entered before any user in the account can use the networking features.

NOTE

Two logs are required to prevent the log from writing over itself. When the first log is filled, the second is used. When the second is filled, the first is reused.

If considerable information is anticipated to be recorded, and/or if you want to keep the log for a long period of time, create a large datafile (up to 18 parts long). If minimal information is expected, a one- or two-part datafile should be sufficient.

You should not use these logs for any other purpose. Some account owners have created the logs, listed them, and then have destroyed them to get the disk parts back. The result of this action is the network options will appear, but once an operation is started, it won't conclude correctly, and the log display won't work at all. Be careful.

The following steps describe how to add the network logs to your account directory (figure 5-8). (Refer to Creating Files earlier in this section to learn how to create a student datafile.)

1. Press DATA from the account options display (refer to figure 5-1).
2. Type the letter in front of the "Network log datafile" option.
3. Type the name of one of the datafiles. Press NEXT.
4. Type the letter in front of the "Network alternate log file" option.
5. Type the name of the second datafile. Press NEXT.

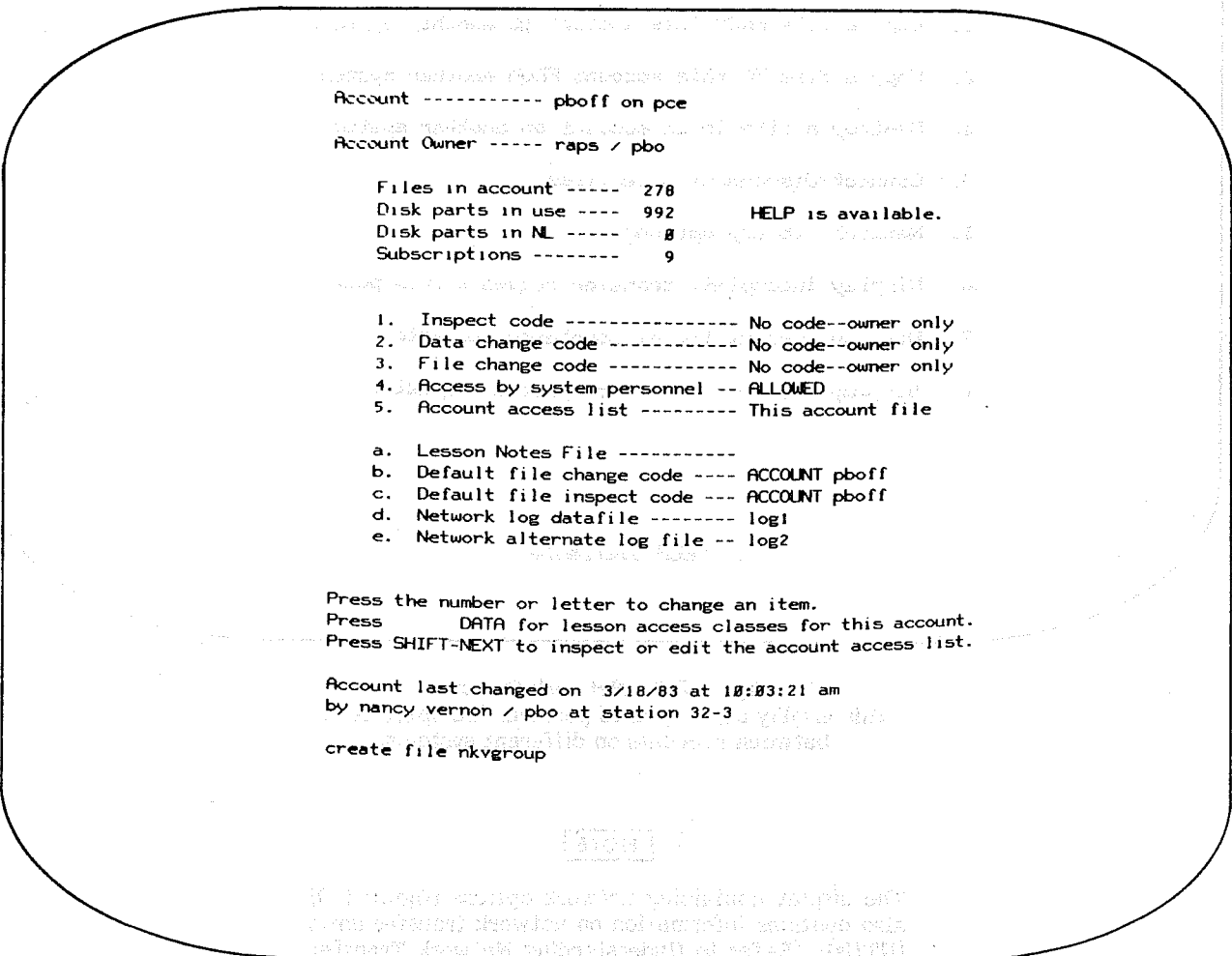


Figure 5-8. Account Directory with Network Features
 Two additional options appear in the account directory when the networking features have been enabled. They are the "Network log datafile" and the "Network alternate log file".

After the datafile information is entered on figure 5-8, the "Network" option appears on the account options display (figure 5-1). The "Network" option is the entry point for all intersystem file operations. To see the Network Options display (figure 5-9), type the letter in front of the "Network" option on figure 5-1.

Network Options

Account name ----- mktho on pce
Account owner ----- greg witt / field

NTUs allocated each month -----	488
NTUs allocated this month -----	488
NTUs used this month -----	24
NTUs remaining this month -----	376

1. Copy a file FROM this account TO another system.
2. Copy a file TO this account FROM another system.
3. Destroy a file in an account on another system.
4. Connect/disconnect notesfiles.
5. Network Library options.
6. Display incomplete transfer requests from pce.
7. Display current log of completed requests.
8. Display previous log of completed requests.

HELP available

Figure 5-9. Network Options
This display allows you to perform file operations between accounts on different systems.

NOTE

The display containing network options (figure 5-9) also contains information on network transfer units (NTUs). (Refer to Understanding Network Transfer Units later in this section for information on NTUs.)

The network options are:

- **Copy a File from This Account to Another System**

Allows users to send a copy of a file in one account to a named account on another system.

NOTE

Users with the same account and file names on different systems offering PLATO services are cautioned that files from the sending system will replace files with the same names on the receiving system. For example, file "fiction" in account "library" on system pea, will replace file "fiction" in account "library" on system pea.

If there is any doubt in the sender's mind that file "fiction" in account "library" on system pea should be copied over by file "fiction" from account "library" on system pea, a prefix (a letter put before the file name) should be added to the name of the copy of file "fiction" from system pea (for example, "pfiction").

- **Copy a File to This Account from Another System**

Allows users to bring a file from an account on another system to the user's current account and system.

- **Destroy a File in an Account on Another System**

Allows users to destroy a file in a named account on another system.

- **Connect/Disconnect Notes Files Across Systems**

Allows users to connect/disconnect notes files between and among systems offering PLATO services, and thereby transfer notes and responses written in each notes file to other connected notes files on other systems. The result is a maximum of 18 general notes files, each on a different system, that combine the communications of the user communities.

- **Display Incomplete Transfer Requests**

Allows users to see a list of intersystem file transfer requests that have not yet been completed. Only requests for transfers of files from the system on which the user is signed on are displayed. (For example, if the user's account is library on system pea, only requests for file transfers from account library on system pea to another system are listed.)

- **Display Current Log of Completed Requests**

Allows users to see a list of the most recently completed intersystem file transfers.

- **Display Previous Log of Completed Requests**

Allows users to see a list of completed intersystem file transfers that were not recent enough to be included in the current log of completed requests.

To prepare the account to use the network options, the account owner should determine the networking needs of the account, as well as which networking features can satisfy those needs. The account owner should also decide which users in the account (in addition to the account owner) need access to the network options and whether accounts and users on other systems need authorization to transfer files to the account. If the account's networking needs are minimal and simply require the account owner to copy files from the account to another account on a different system, no further account preparation is needed. If, however, the needs of the account require users other than the account owner to have access to the networking features, or require files from other systems to be copied to the account, the account owner must prepare an account access list.

An account access list allows the account owner to delegate file transfer (copy) authority to users in one or more accounts and systems, as well as determine and limit the accounts from which transferred files are received.

Refer to **Creating an Account Access List** earlier in this section for information on how to create an access list for your account.

Registering Users on Your System and Other Systems

To copy files from one system to another and/or to delete files on other systems, users requesting the copy or delete must have appropriate access authorizations on both the initiating and receiving account access lists. (Refer to **Registering Users in the Account Access List** earlier in this section for information on how to register users on your system.)

After the networking features are enabled in your account, an additional option appears in the account access list: "To see or edit access for people on another system". This option is the mechanism used to specify and control the following users.

- Users on other systems who may send files to your account.
- Users on other systems who may request copies of files from your account.
- Users on other systems who may delete files from your account.
- Users from other systems who may connect notes files on other systems to notes files in your account.

The "To see or edit access for people on the same system as the account" option is used to specify the following users.

- Users on your system who may send files from your account to other systems.
- Users on your system who may request that files from other systems be placed in your account.
- Users on your system who may connect notes files on other systems to notes files in your account.

An account access list can have two or more parts: an access list for users of the system in which the account resides, and an access list for users of any number of other named systems.

Requests for all intersystem file manipulations will be honored only if the user requesting a multiple system file action is listed in the account access list in all accounts, on all systems involved in the requested file manipulation.

Therefore, an account director wishing to use the networking features must complete the following steps.

1. Create an additional section in his or her access list for every other system with which file activity is anticipated.
2. Specifically list those users on other systems who are authorized to send, receive, or delete files or to connect notes files.

Assigning User Access

Each of the network options requires a specific set of access authorizations. The user access options (refer to figure 5-4) of the account access list allow you to set access authorizations. The following list describes the appropriate access settings for each of the network options. (Refer to Assigning Access Options earlier in this section for information on how to set access authorizations.)

- Copy a File from Your Account to Another Account

Authorizations required:

- Authority to copy a file to another system in your account on your system.
- Authority to create a file in the account on the destination system.

Example:

jane doe/teacher/pca of account "school" wants to send a file to mary jones/history/pea who uses account "jrhi". jane doe/teacher/pca needs authority to copy a file to another system in account "school" on pca, and jane doe/teacher/pca needs authority to create files in account "jrhi" on pea.

If Jane and Mary regularly share on-line materials, the authorizations would probably be set up and retained. If this is a one-time collaboration, Mary would probably remove Jane's authority to create files in her account ("jrhi") as soon as she saw the file had been installed in Jane's account.

- Copy a File to Your Account from Another System

Authorizations required:

- Authority to copy a file to another system on the system from which the file is to be copied.
- Authority to create files in the account on the system to which the file is to be copied.

Example:

Jane and Mary have used the same file with their students for one school term. Mary made a few additions to the file during the term which Jane would like to see.

With authority to copy a file to another system in account jrhi on pea, and authority to create files in account school on pca, jane doe/teacher/pca could request the file be sent to her account on pca from her account school, requiring no access to the pea system.

- **Delete a Copy of a File on Another System**

Authorizations required:

- Authority to copy a file to another system in the account from which the request is placed.
- Authority to delete files in whatever account the file resides.

Example:

At the end of the school term, no changes have been made to the file that Jane loaned to Mary, and Jane still has her original copy of the file. Jane chooses to delete the file in Mary's account "jrhi" on pea.

To do this, jane doe/teacher/pea needs authority to destroy files in account "jrhi" on pea.

- **Connect Notes Files Across Systems**

To connect notes files across systems, a user must have authority within the access lists of the accounts containing the notes files to connect or disconnect files between systems. Notes files to be connected across systems must themselves allow connections. The option to allow or disallow connections exists within the director options in every notes file and can be changed only by the notes file owner.

Authorization required:

- Authority to connect notes files between systems.

Example:

Jane wants to connect notes file "janenotes" between pea and pea. To do this, Jane must have the authority to connect files between systems in the account containing "janenotes" on pea. She must also have authority to connect files between systems in the account containing "janenotes" on pea. Therefore, the pea account owner (or director) must create a special pea section in the account access list and give jane doe/teacher/pea authority to connect files between systems. In addition, the file owner of "janenotes" on both systems must allow connections in the director options of each notes files.

INTERSYSTEM FILE SECURITY

As an account owner or director, you are responsible for the security of files in your account. When transferring files from one system to another, you should be cautious about using group and account codes to secure these files. If you have several accounts on several systems and all the accounts share the same name, then account coded files sent between and among your accounts on these systems are secure. However, you should never send your account coded files to an account of a different name. This allows other users to copy your file and its codewords; transfer the file back to the original system; and gain access to your group, lessons, or databases. Similarly, group coded files should only be sent between and among accounts which also contain groups of the same name. However, because group ownership cannot be simply determined across systems, your PLATO account does not always allow group coded files to be copied across systems. Typed codes offer the best security for files sent between systems and provide the best protection from unauthorized users accessing your account.

When you send a copy of a file from your account to an account owned by another person or group, you no longer control that copy of the file. The file's codewords could be changed by a new account director, the lesson code could be changed, the lesson could be submitted for publication by another person using and relying on work done by you or others in your account, or other unauthorized changes could be made. Such practices are not ethical; nevertheless, they are possible and should be considered. You should be extremely selective in determining which files to send to other accounts over which you have no control.

UNDERSTANDING NETWORK TRANSFER UNITS (NTUs)

A unit of data transfer between systems offering PLATO services is a network transfer unit (NTU). The NTU is the tracking unit for use of the networking features.

NTU Sizes and Priorities

Not all data receives the same priority when being transmitted between systems. Small amounts of data, such as intersystem transactions and personal notes that are within 128 computer words, receive high priority. Larger amounts of data, such as files to be transferred, receive a lower priority.

One note is one NTU. One note sent to five connected notes files is five NTUs.

Intersystem transactions accrue one NTU for every 128 computer words sent. Any remainder is rounded up to become an additional NTU.

When a lesson file is sent from one system to another, one NTU is accrued for each block sent. When a dataset, nameset, datafile, notes file, or group file is sent to another system, seven NTUs are accrued for each part sent. When a request to delete a file or a set of files is sent to another system, one NTU is accrued for each file deleted.

NTU Accounting

NTUs are tabulated as they are sent from a system. Therefore, files sent from an account, deletion requests placed in an account, notes sent by intersystem notes files within an account, and transactions sent from namesets within an account are all charged as NTUs to the account. When a request to copy a file from another system is placed in an account, NTUs are accrued from the account sending the file, not from the account in which the request was placed. When a request for an intersystem file manipulation fails, no NTUs are collected from the account. Only completed requests are accrued.

Each time an information transfer request is issued (file copy, file delete, notes file connection, intersystem note copy, intersystem transaction), the appropriate number of NTUs is added to the account tabulation. If at some point during the billing month an account reaches its NTU ceiling, all information transfer ceases until the account owner raises the NTU limit.

Users are asked to note that although intersystem notes and transactions are not listed in the network log associated with each account, they are tabulated as NTUs used in the account.

NTU Controls

Each account owner has control over the amount of data that can be sent from an account within each billing cycle. Only NTUs sent from an account will be accrued for that account.

Only account owners have the option to increase or decrease an account owner-controlled limit on the amount of network traffic from his or her account within a billing cycle. Therefore, an account owner may choose to limit activity to remain within the allocation or put a ceiling on the amount of traffic for which he or she is willing to pay in a given billing cycle.

Choosing "Network options" on the account options display (refer to figure 5-1) provides a list of the networking options and also displays the following:

- a. Network Transfer Units allocated each month---- XXXXX
- b. Network Transfer Units allocated this month---- XXXXX
- c. Network Transfer Units used this month----- XXXXX
- d. Network Transfer Units remaining this month---- XXXXX

"NTUs allocated each month" allows the account owner to indicate a ceiling on the number of NTUs for which he or she is regularly willing to accept. "NTUs allocated this month" allows the account owner to indicate a specific number of NTUs allowed for the current billing month, without permanently raising or lowering the NTU ceiling.

Only an account owner can alter these allocation fields. To alter the ceilings, type "a" or "b" and enter at the arrow the desired ceiling for all months or the current month.

When networking features are initially enabled in an account, both fields will automatically be set to the number of NTUs allocated to the account without charge. Authorization of any service beyond the allocated level must be granted by the account owner.

At the end of each billing period, the NTUs used will be set to zero and the NTUs remaining will be set to the monthly allocation. At that time, the NTUs allocated this month will be reset to equal the regular monthly allocation. Therefore, account owners do not have to manually clear special allocations at the end of a given month.

Users should note that NTUs and NTU allocations are not cumulative from month to month, nor are they transferable from one account to another.

PROTECTING PLATO FILES

The files you use on the PLATO network are stored on disks. On rare occasions, disk failures occur. If a failure does occur and a disk is damaged, system personnel first attempt to recover files from the affected disk. Unless a disk is severely damaged, most of the files can be recovered and the effect of the failure is then limited to as few files as possible. A copy of lost files, from the previous night, will be used to replace files which cannot be recovered. These copies are referred to as backups.

INSTALLING BACKUPS

A backup will, in most cases, restore files to the state they are in before the failure. This would not be the case, though, if the file were recently changed. For example, if the copy was made at 2:00 a.m., and the file was damaged at noon the following day, any changes made between those times would be lost. Changes would include edits to a lesson, updates to student records in a group, storage of new notes, nameset actions including intersystem transactions and the movement of files through intersystem file transfers. If edits to a lesson are lost, the editing will have to be done over again. If a file was transferred to another system and a failure occurred on that system, the file would have to be transferred again. The PLATO Hotline and the PLATO consultants are ready to help users affected by any failure.

Whenever possible, system personnel will verify through account logs which files have been affected and attempt to notify the owners of those files. This is not always possible, however, in cases where the account log has been damaged, or when access to the account is not allowed. Therefore, disk problems on any of the domestic service systems are also reported on all systems in notes file "announce". (Refer to Notes in section 4 for more information on "announce"). The announcement will give the time of the failure and will list the names of master files that were affected. (Master files are collections of PLATO files on a given disk. Every PLATO file is a part of a larger, master file.) The announcement will also say whether a backup has been installed, or whether files contained in those master files should be inspected for possible damage.

HOW TO INSPECT FILES FOR DAMAGE

To determine which, if any, of your files have been affected by a disk failure, write down the names of the master files listed in "announce" and the time the failure occurred.

Then enter your account and choose the option, "Display file data". From the file data display (figure 5-6), choose the option "List of files for this account". On the display that follows, press SHIFT-LAB to see the master files in your account. Instructions are given for displaying each file contained in a given master file.

One way to inspect a file for possible damage is to check the file directory (press data after entering a file) shown in figure 5-2 to see if it is complete. In particular, you should check the last edit date and time to verify that they are accurate with the last editing that you might have done. If the file is a lesson, you can also condense it.

REQUESTING A BACKUP

If a file is damaged, you can request a backup by calling the PLATO Hotline.

Control Data makes extensive efforts to protect PLATO files but the final responsibility for maintaining files is the user's. Control Data cannot be held responsible for lost or damaged data. Users should create procedures for the recovery and restoration of file content in the event of system failures that result in data loss. Such a procedure should include checking "announce" daily to assure you know when disk failures occur.

APPENDIX A

IST AND VIKING KEYBOARDS

IST AND VIKING KEYBOARDS

The IST Keyset	A-2	Less Frequently Used IST and Viking	
Character Keys	A-2	Function Keys	A-7
Function Keys	A-2	Access Characters Used as Accent	
The Viking Keyset	A-3	Marks	A-16
Character Keys	A-3	Symbols Used When Writing Code	A-17
Function Keys	A-4	Unique Viking Function Keys	A-20
Frequently Used IST and Viking			
Function Keys	A-5		

IST AND VIKING KEYBOARDS

A

Most of the time you will use a keyboard to interact with PLATO instruction and services. Both IST and Viking keyboards have character keys and function keys. Character keys, when pressed, display a letter, number, or symbol. Function keys are used to simplify communication with a PLATO lesson or service. Pressing one function key tells a PLATO lesson you want to see or do whatever is next; pressing another says you want to review a display you had seen before. Some keyboards (IST-III and Viking) will have additional keys needed for data processing applications, but have no PLATO uses.

This appendix introduces you to both IST and Viking keyboards and reviews function key use in detail. All users are encouraged to read the introduction to the terminal(s) they use, as well as Frequently Used IST and Viking Function Keys later in this appendix. Viking users should read Unique Viking Function Keys. PLATO authors should read and study Less Frequently Used IST and Viking Function Keys later in this appendix for some helpful authoring tips.

PLATO users outside North America may be interested in special language keysets available for the Viking terminal. Although it is possible to write in some languages other than English using the standard keysets, the specially designed keysets do simplify typing.

Special Viking keysets are available for French, German, Swedish/Finnish, British, Spanish, and Danish/Norwegian speakers. Keyboard diagrams for these languages are available in figures A-5 through A-10. Notice that only the character keys, the TAB key, and the left SHIFT keys differ on these special language keysets. Viking function key usage remains constant across all languages. So PLATO users with special language keysets should read and study the sections on Viking function key use.

THE IST KEYS

CHARACTER KEYS

IST character keys are the unshaded keys in figure A-1. These keys resemble typewriter keys and, when pressed, display the associated numbers, lowercase letters, punctuation, and arithmetic characters. These keys also display uppercase letters and other punctuation marks when pressed while holding down a SHIFT key. The five shaded keys to the extreme left (+, -, x, ÷, ←) also display characters.

Either of the two SHIFT keys is pressed to type capital letters and allow other keys (numeric and function keys) to have one or two other meanings. For example, the shift spacebar is a backspace (with no erase).

To type a shifted character, while holding down a SHIFT key, press a second key.

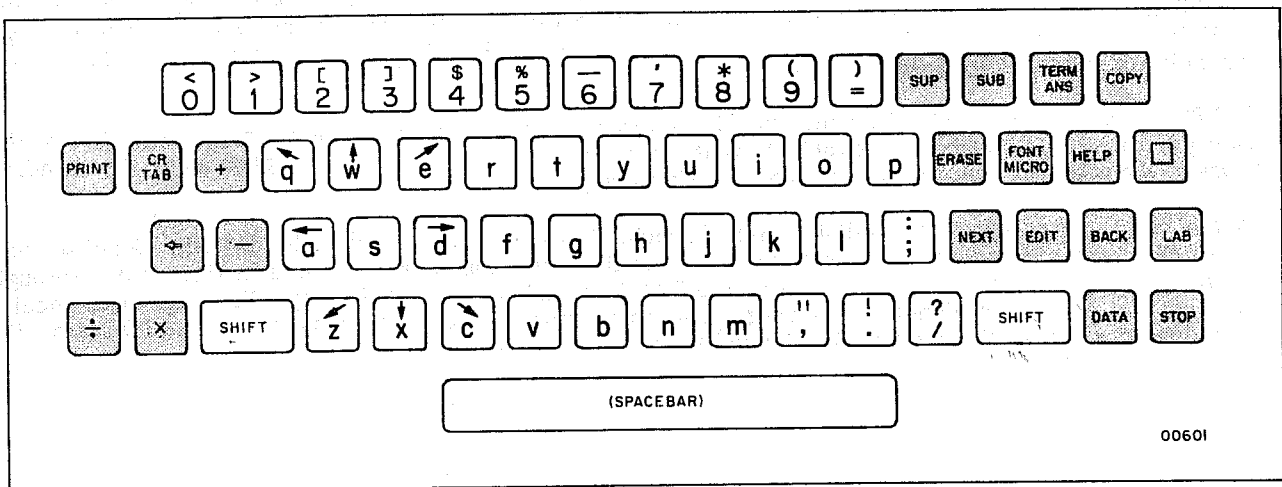


Figure A-1. Control Data IST-III Keyboard

FUNCTION KEYS

The IST function keys are the shaded keys located to the left and right of the character keys. They are the CR/TAB and PRINT keys (to the extreme left of figure A-1) and shaded keys to the extreme right (SUP, SUB, TERM/ANS, COPY, ERASE, FONT/MICRO, HELP, ACCESS/□, NEXT, EDIT, BACK, LAB, DATA, and STOP).

Each function key has a lowercase and an uppercase. To use lowercase, press the function key. To use uppercase, hold a SHIFT key down while pressing the function key.

Study the PLATO lesson "Intro", "An Introduction to the IST Keyboard", for more information.

THE VIKING KEYSET

The Viking, like the IST keyboard, has both character and function keys. But there are also some notable differences.

The Viking keyboard is larger than the IST, the location of some character and function keys is different, and some function keys and a numeric keypad have been added. Figure A-1 shows the IST-III keyboard. Figure A-2 shows the Viking American National Standards Institute (ANSI) keyboard.

CHARACTER KEYS

Character keys are the 47 unshaded keys in figure A-2. These keys resemble typewriter keys and, when pressed, display the associated numbers, lowercase letters, punctuation, and arithmetic characters. The four shaded keys to the extreme left (+, -, x, ÷) and the ↵ in the upper row also display characters.

Note the arrow legends on the Viking SHIFT keys. This notation differs from that used on the IST keysets. Also note the LOCK key, unique to the Viking keyset. It's located on the left side of the keyboard, next to the multiplication (x) key. It's identified by a symbolic lock. Pressing LOCK locks the keyboard into all capitals until the lock is released.

The broken vertical line (!) (two keys to the left of the ERASE key) is not available to PLATO users.

The numeric keypad to the extreme right (not shown) provides numeric, NEXT, and SHIFT-NEXT (while holding down the SHIFT key, press NEXT) keys only. The calculator-like arrangement is useful when entering columns of figures, or working in math or science lessons.

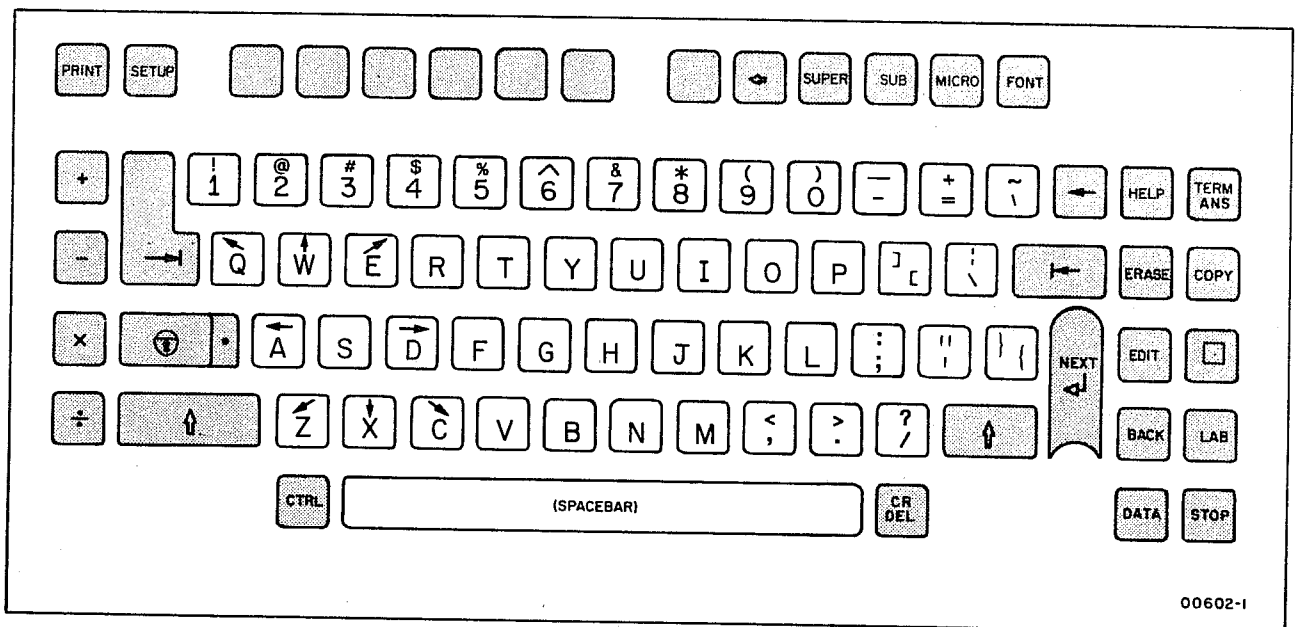


Figure A-2. Control Data Viking Keyboard

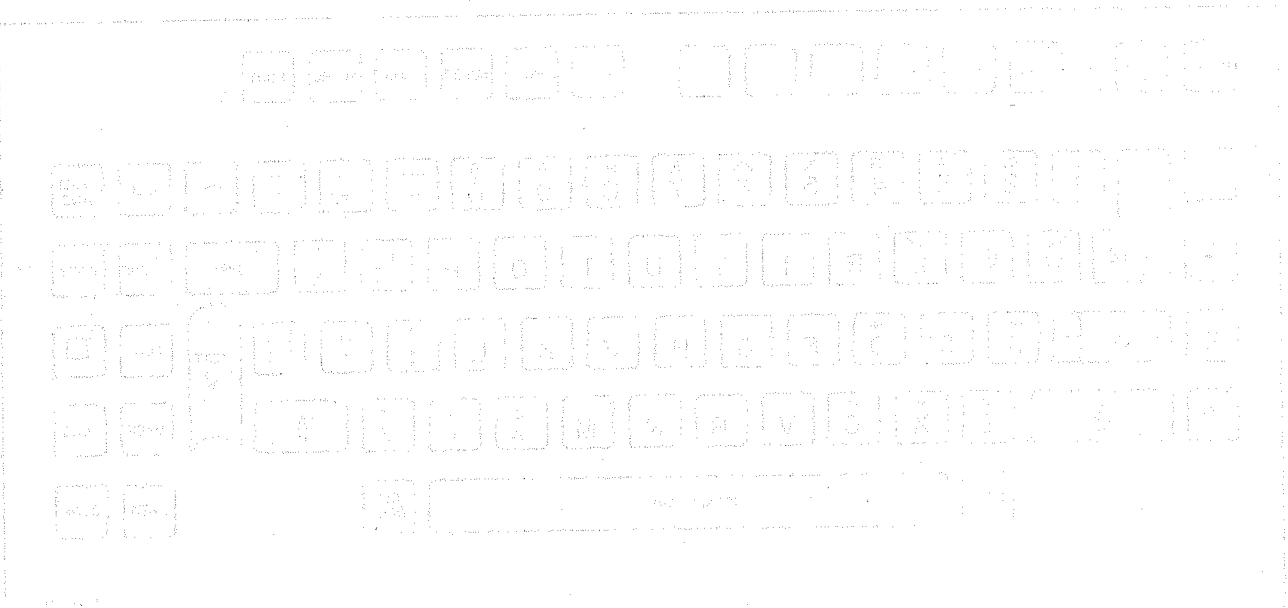
FUNCTION KEYS

Unique to the Viking keyset are two sets of function keys. Function keys known to PLATO users are the shaded keys in figure A-2 to the left, right, and below the character keys. PRINT and SETUP are located at the upper left. CR (carriage return) is located to the right of the space bar and CTRL (control) is located to the left of the space bar below the character keys. HELP, TERM/ANS, ERASE, COPY, EDIT, ACCESS/□, BACK, LAB, DATA, STOP, and NEXT are located to the right of the character keys. SUPER, SUB, MICRO, and FONT are in the upper right of the keyboard. Note that their positions differ from their locations on the IST keysets. The second set of Viking function keys is located at the top of the keyset, above the character keys. PLATO users will use only two of these keys, those labelled F2 and F4.

The F2 key, located on the top row of keys, is used to prepare your Viking terminal for PLATO use. The F2 key itself is not labelled. You will see raised letters identifying the F2 key just below the key on your keyset. Whenever the Viking terminal is turned on and connected to the network to use PLATO instruction, the F2 function key must be pressed. Pressing F2 prepares your terminal to communicate with the PLATO network.

The F4 key, located on the top row of keys, is used to prepare your multi-purpose Viking terminal to display PLATO courses on disk. The F4 key itself is not labelled. You will see raised letters identifying the F4 key just below the key. Whenever the Viking terminal is turned on and connected to a flexible disk drive to use PLATO instruction, the F4 key must be pressed. (After pressing F2, you may insert a specially formatted disk to prepare your terminal for network use.) Pressing F4 prepares your terminal to communicate with the PLATO instruction on your flexible disk.

Study the PLATO lesson "Øvkintro", an introduction to the Viking terminal keyboard, for more information.



FREQUENTLY USED IST AND VIKING FUNCTION KEYS

Descriptions of those function keys all PLATO users (authors, students, and instructors) will need and use follow. You'll use the keys listed below to direct your progress through PLATO lessons, tests, and other features. To identify yourself and begin working, see something new, review something you saw earlier, or stop what you're doing, you'll use one of the keys listed below.

NEXT

The NEXT key is the most frequently used key on the keyboard. Pressing NEXT says that your response to a question is complete or that you are ready for the lesson to continue. When you are in doubt about what you do in a PLATO lesson, press NEXT.

BACK, HELP, DATA, and LAB

These keys are used in PLATO lessons to help you quickly direct your progress. Pressing these keys is an easy way of communicating what you want to do next. Whenever these keys are available to you, a lesson will list the keys and what they'll do for you. Usually pressing BACK lets you review the previous display; pressing HELP provides additional information; pressing LAB provides problems to solve; and pressing DATA provides supplemental information. These are only examples of typical uses. Carefully read and note the use of these function keys in each PLATO course you take.

Sometimes, additional keys (other than BACK, HELP, DATA, and LAB) are needed to move through a lesson. In these cases, you will often use a SHIFT key in combination with a function key; such uses will be described in your PLATO lesson as SHIFT-BACK, SHIFT-DATA, and SHIFT-LAB. To use a shifted function key, hold down a SHIFT key while pressing the other named function key.

ANS

The ANS key can be enabled to give you the correct answer to a question in a PLATO lesson. Unless the ANS key is advertised as available, pressing it has no effect. Like HELP and DATA, ANS will always be advertised in a lesson when it's available.

When using a course organized within PLATO Learning Management (PLM) you're asked to press ANS after you choose a response to test questions. Pressing ANS in a PLM test says you're ready to have your answer evaluated.

SHIFT-STOP

SHIFT-STOP is a special keypress with consistent functions. SHIFT-STOP is pressed as a part of signing on to and off of the PLATO network. It is also pressed to leave any lesson or PLATO service, both on the network and flexible disks.

Unlike HELP, DATA, and LAB, special uses of SHIFT-STOP cannot be defined in each lesson or course. Its uses are always the same.

Authors have an additional use for SHIFT-STOP. While in a lesson file, SHIFT-STOP can be pressed to condense newly written code, allowing them to execute and see the lesson as a student would see it.

The function keys described below are used when typing at an arrow (➤). Whenever a PLATO lesson or test expects you to type a response, an arrow is displayed. Although many responses are only one or two characters long, some responses or entries could be sentences or paragraphs. These function keys help you correct and edit typed responses before you press NEXT to have them evaluated.

ERASE*

Use the ERASE key to erase part of a word or response you typed before you press NEXT. Each time you press ERASE, one character is removed from your response. Pressing SHIFT-ERASE removes an entire word. Erasing begins with the last character or word entered in the response.

SUPER

Use the SUPER key to write superscripts or to indicate exponentiation in an algebraic expression. Pressing SUPER causes the next character to appear 5/16 of a line higher than ordinary text. If the superscript contains more than one character, press SHIFT-SUPER to lock the keyboard into superscript mode. All typed text then appears as part of the superscript until you press SHIFT-SUB.

SUB

The SUB key is similar to SUPER but produces subscripts rather than superscripts (that is, the character appears 5/16 of a line lower than ordinary text). Pressing SHIFT-SUB locks the keyboard into subscript mode. The keyboard stays in this mode until you press SHIFT-SUPER.

EDIT*

The first time you press EDIT, an entire typed response is removed from the display; thereafter, each time you press EDIT, one word of the response is brought back. Pressing SHIFT-EDIT returns the remainder of the response. For example, if you typed President George Washington and want to change it to George Washington, press EDIT to erase the response, then press EDIT to return President. Press SHIFT-ERASE to erase President, and press SHIFT-EDIT to return George Washington. Use of the EDIT key is circular (that is, if the entire response has been returned to the display, pressing EDIT again removes the entire response, as at its first use).

COPY*

The COPY key copies a word from the line of the text above each time it is pressed. Pressing SHIFT-COPY will copy an entire line of text.

TERM

The TERM key is a shifted key used to reach a set of options available to PLATO network users. TERM features are not available to microcomputer users. To use it, hold down the SHIFT key and press TERM. Pressing TERM won't erase your entire display. It will display the following message at the bottom of your display.

what term? ➤

After you type in the name of the term you want to use and press NEXT, you can leave a comment on a lesson, ask for an instructor's help, write a personal note, or do some calculations. To learn more about the terms you can request, refer to Helpful Tools in section 2, or Getting Help and Using Time-Saving Features, both in section 4.

* When using the COPY, ERASE, and EDIT keys, a word is defined as a set of continuous characters separated from other characters of the response with a blank space or punctuation.

LESS FREQUENTLY USED IST AND VIKING FUNCTION KEYS

The function keys listed below are used most by PLATO authors as well as users writing in foreign languages. These keys are used to type special characters not listed on the keycaps of your IST or Viking keyboards. These special characters are listed for you in figures A-3 (IST) and A-4 (Viking). They're also described in detail in Access Characters Used as Accent Marks and Symbols Used in Writing Code, later in this section.

PRINT

The PRINT key is only available on IST-III and Viking terminals and is used when the terminal printer is attached to the terminal. To print a file, go to lesson "print" and follow the instructions.

With a printer attached to your IST-III or Viking terminal, you may make a copy of the display at any time by pressing SHIFT-PRINT.

SHIFT-HELP

SHIFT-HELP is usually used to delete information. Its availability in lessons will always be listed at the bottom of a display or in a HELP section.

ACCESS

PLATO users require more characters than can be listed on a standard keyset. The ACCESS key allows each character on the keyboard to take on two additional meanings. These hidden characters are made available by using the ACCESS key, and are frequently called ACCESS characters. They are similar to the visible characters and have both lowercase and uppercase. Figures A-3 and A-4 show uppercase and lowercase access characters for the IST and Viking terminals, respectively. Each box on the display represents a key on your keyboard. Uppercase ACCESS characters are shown in the upper right corner; lowercase ACCESS characters are shown in the lower right corner.

Figures A-5 through A-10 present the same information for the international Viking keysets. The ACCESS key is the (square) key on the right side of the keyboard.

To display the uppercase ACCESS characters press SHIFT-ACCESS (SHIFT-). While holding down the SHIFT key, press ACCESS, release the keys, and press the appropriate key. To display the lowercase ACCESS characters, press SHIFT-ACCESS, release it and press the appropriate shifted key. For example, to display the copyright symbol (©), press SHIFT-ACCESS, release it, and press SHIFT-C.

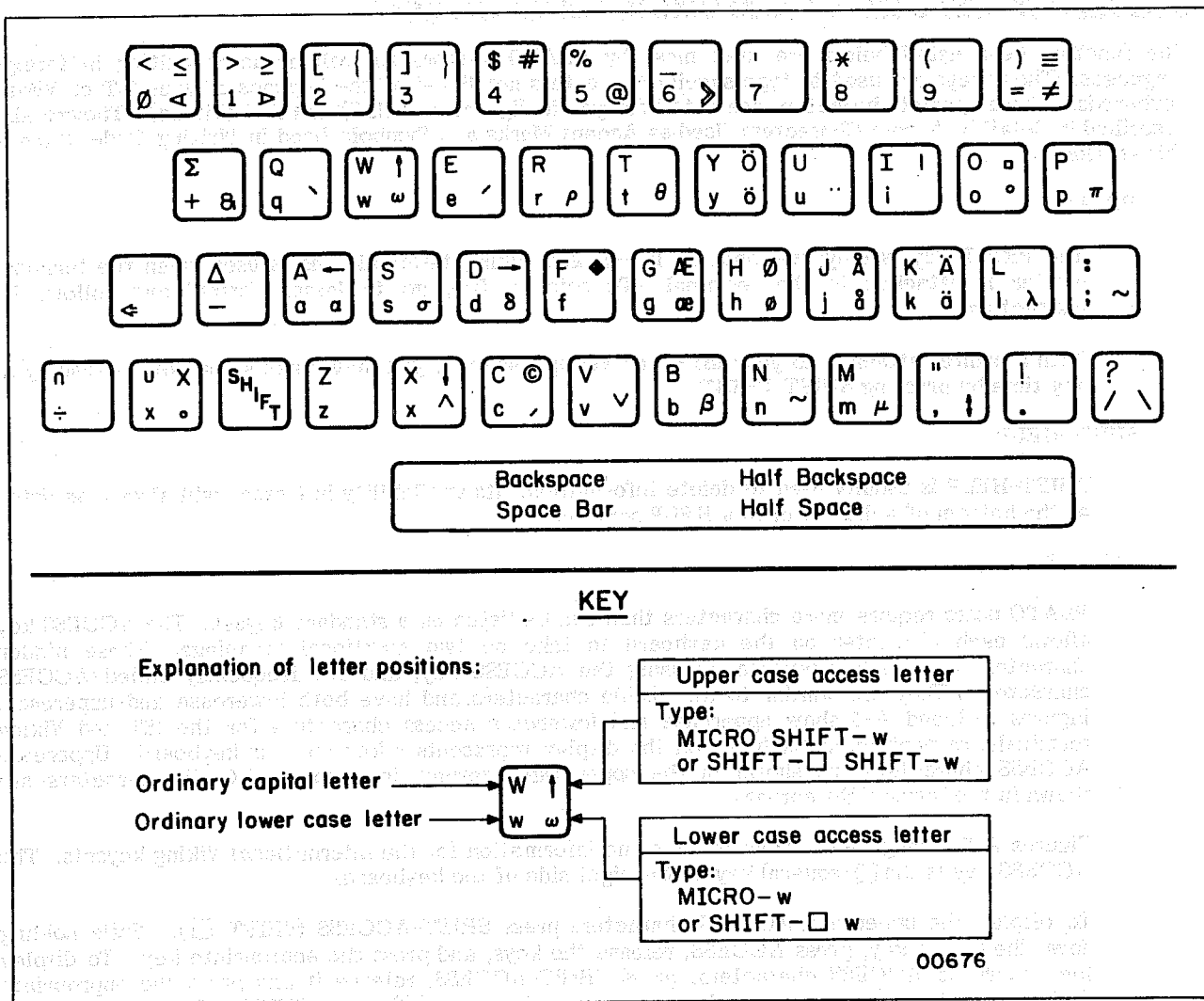


Figure A-3. IST-III Keyboard Showing All Possible Characters

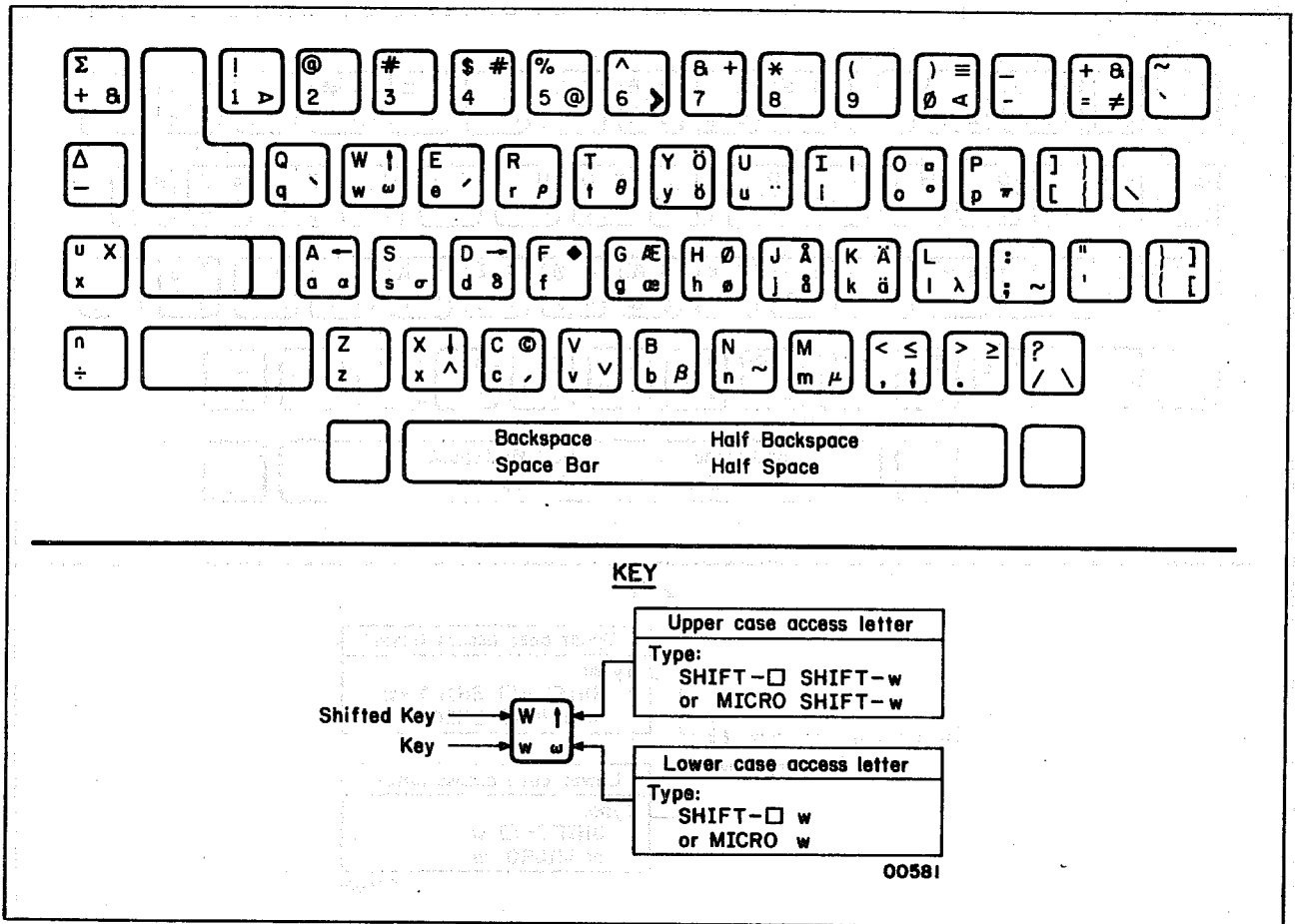


Figure A-4. Viking Keyboard Showing All Possible Characters

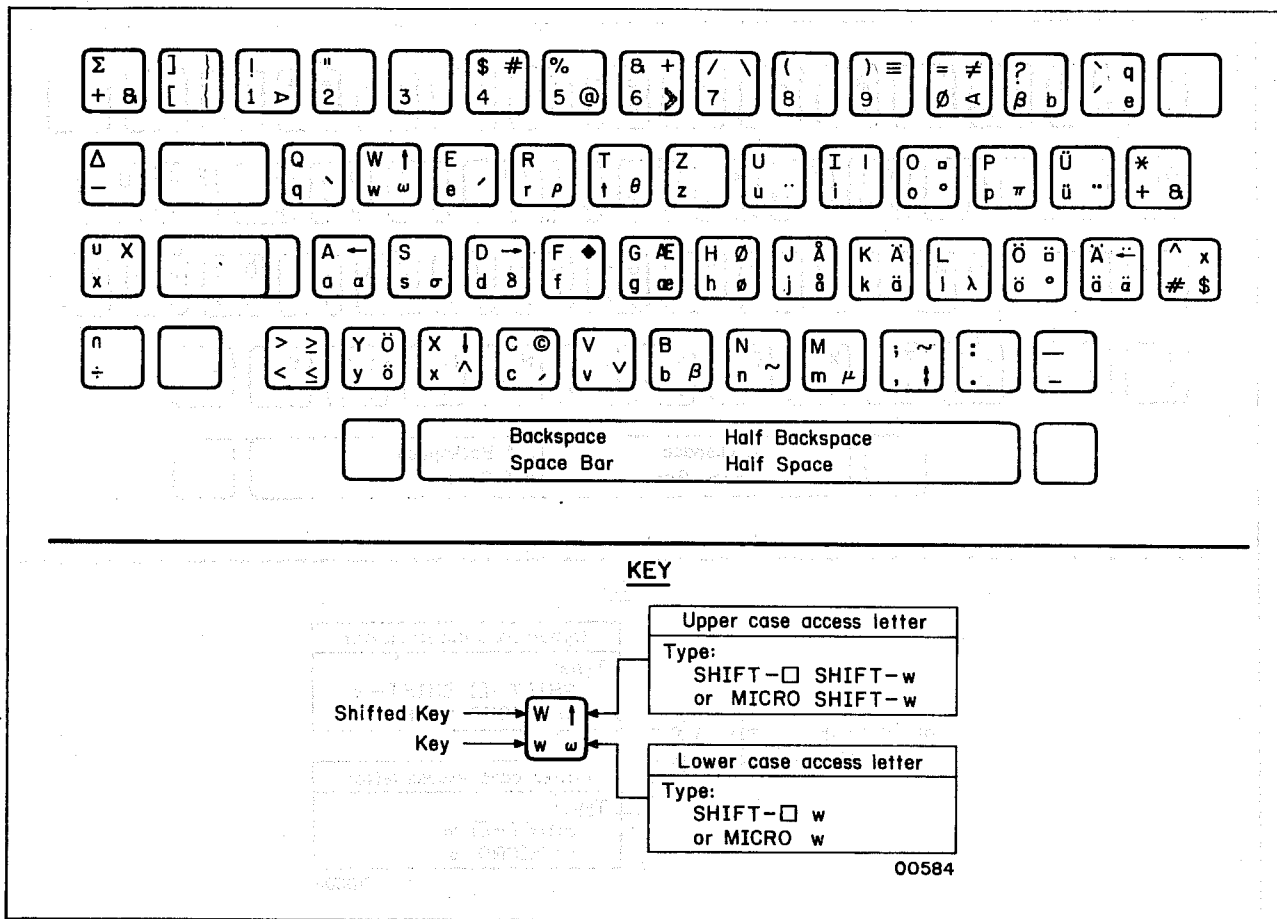


Figure A-6. Viking German Keyboard Showing All Possible Characters

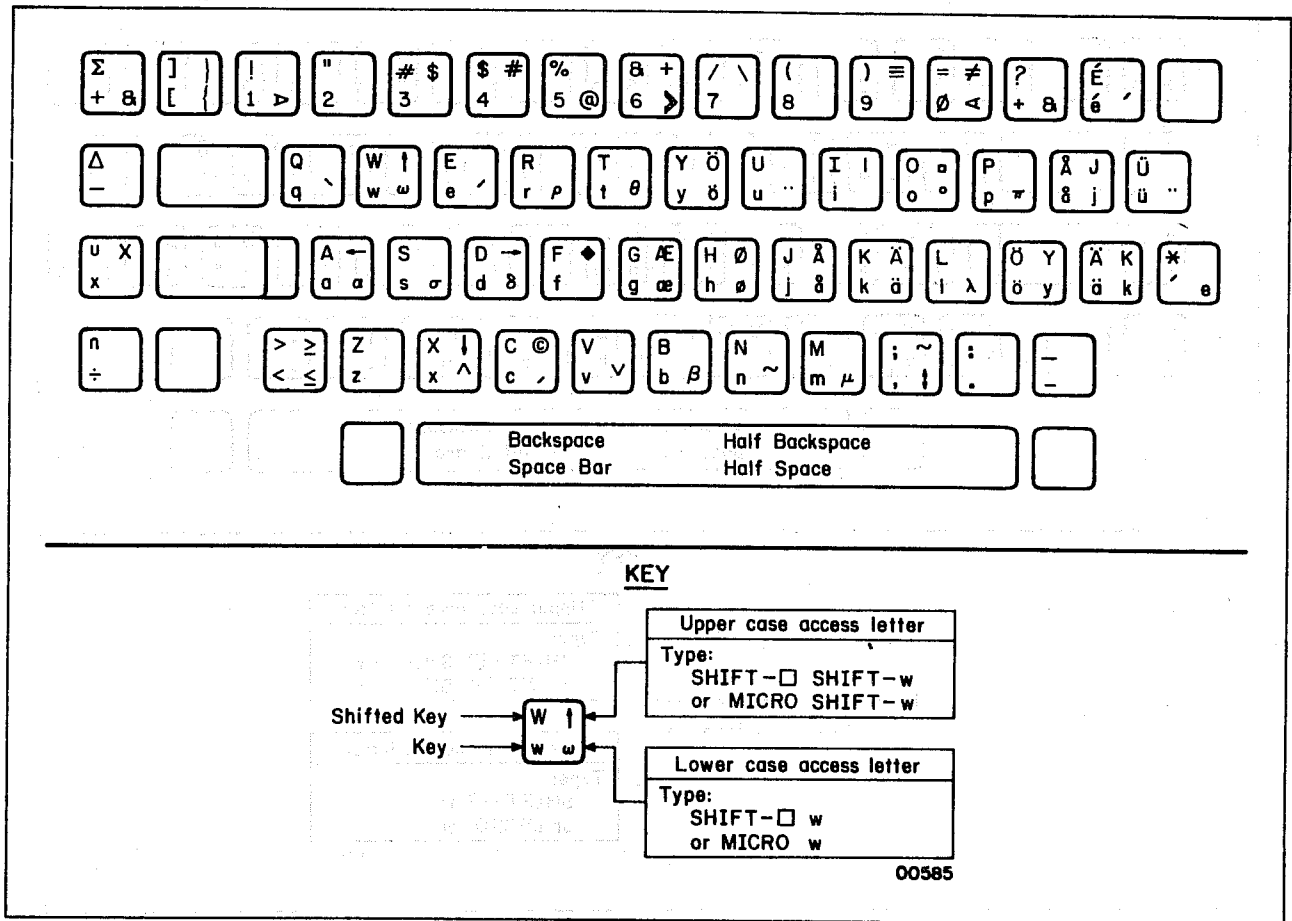


Figure A-7. Viking Swedish/Finnish Keyboard Showing All Possible Characters

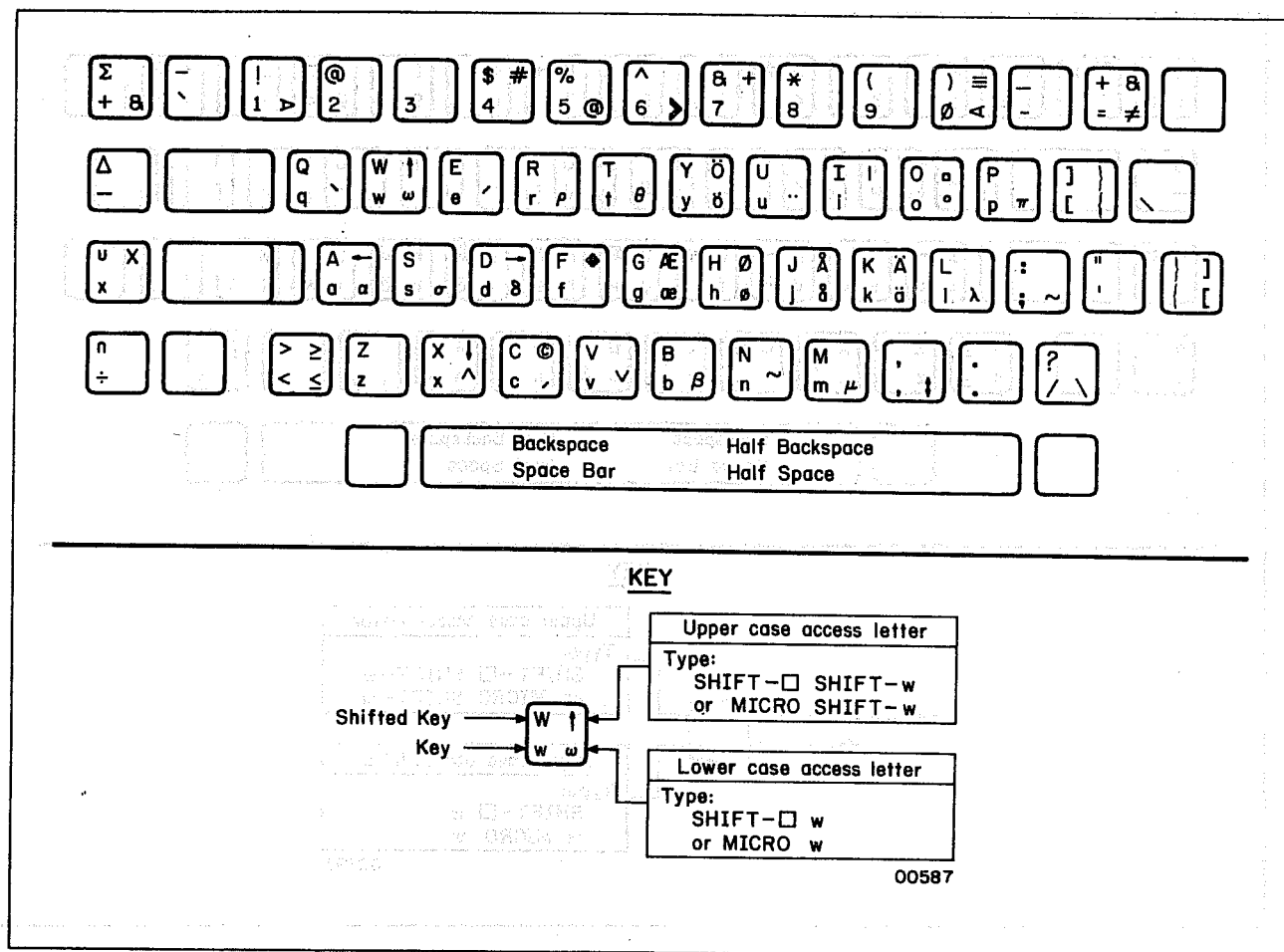


Figure A-8. Viking British Keyboard Showing All Possible Characters

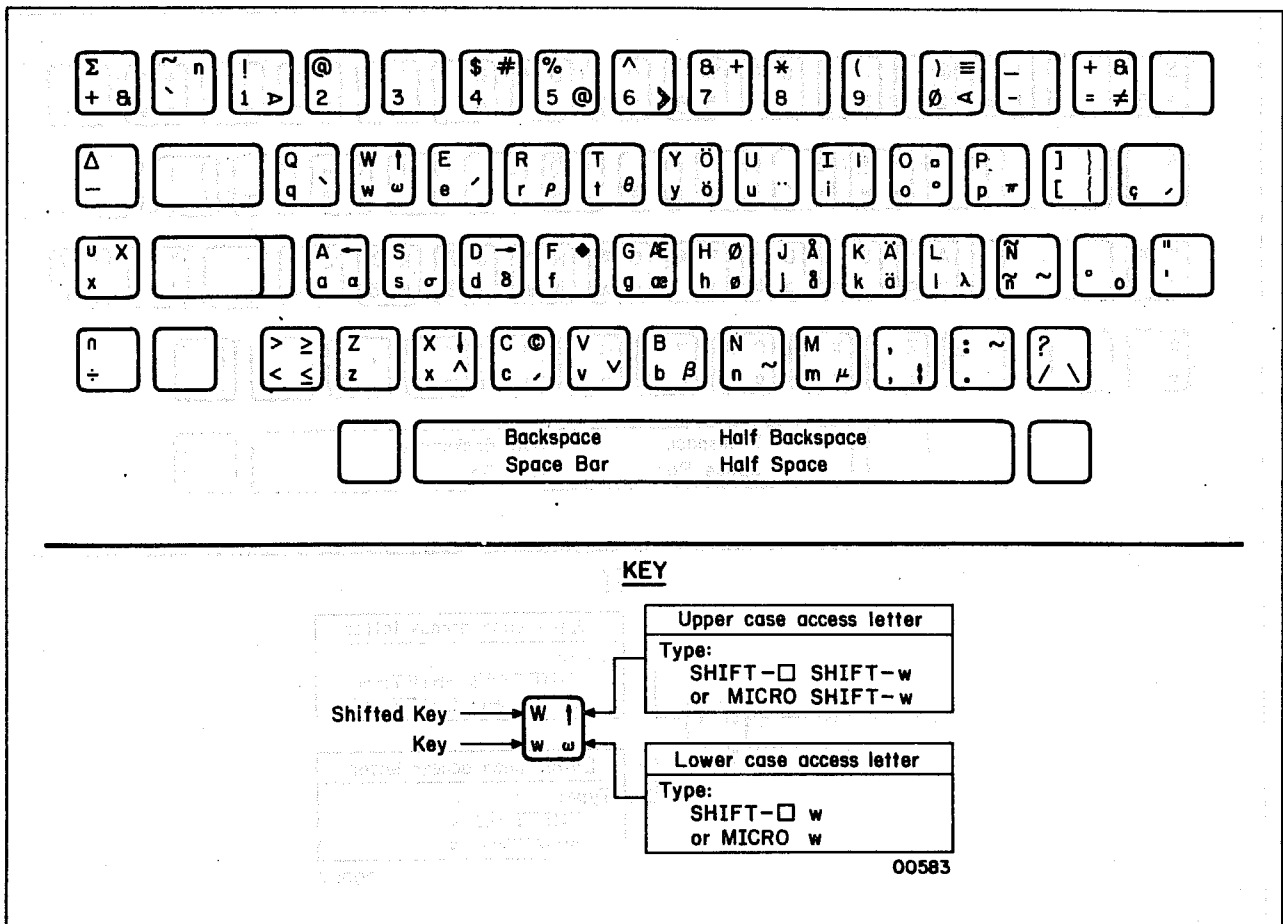


Figure A-9. Viking Spanish Keyboard Showing All Possible Characters

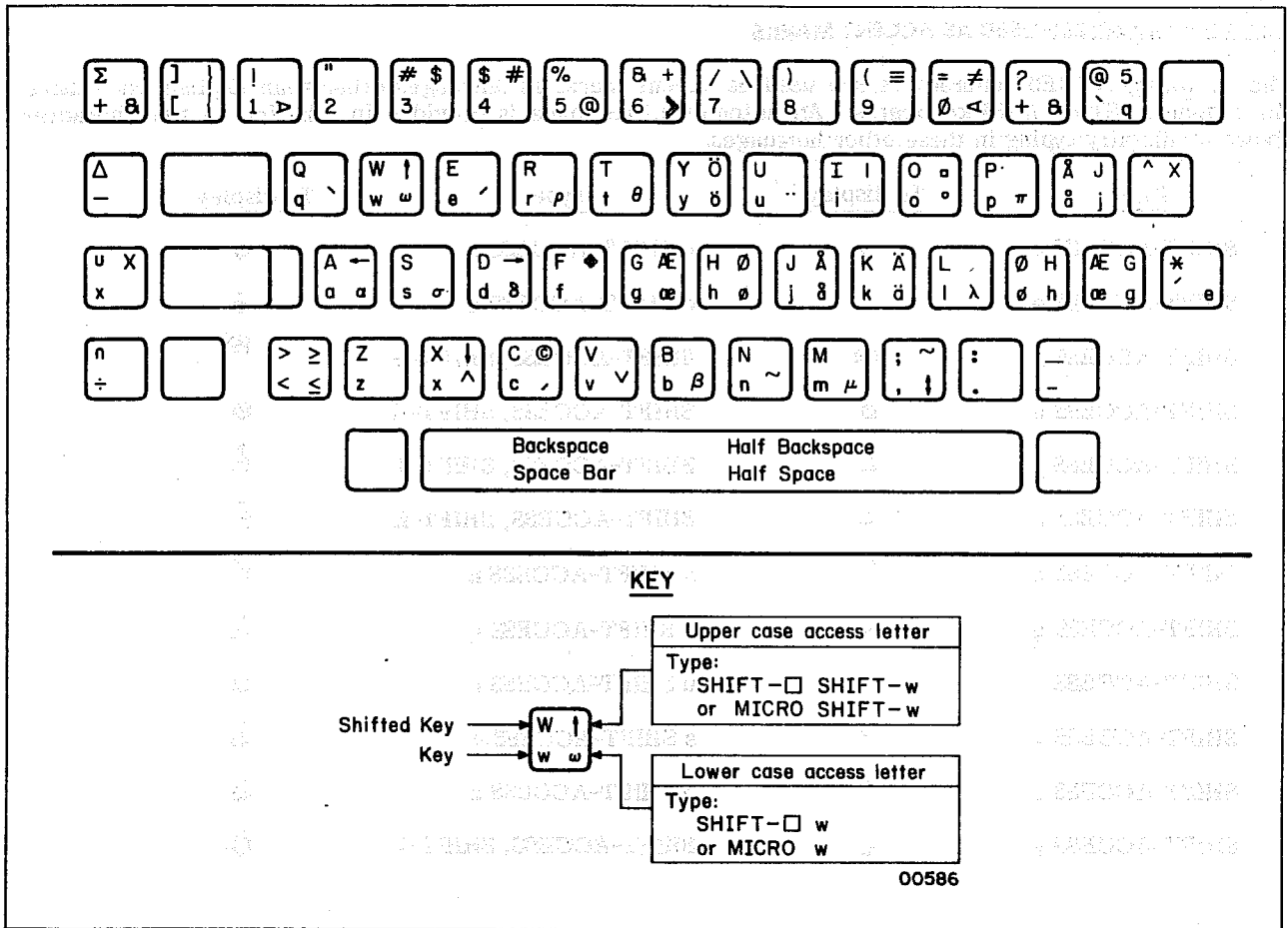


Figure A-10. Viking Danish/Norwegian Keyboard Showing All Possible Characters

ACCESS CHARACTERS USED AS ACCENT MARKS

The following ACCESS characters are used as accent marks in languages other than English when using the standard IST or ANSI keyboards. An automatic backspace is provided in addition to the character shown to simplify typing in these other languages.

<u>Type</u>	<u>To display</u>	<u>Type</u>	<u>To display</u>
SHIFT-ACCESS c	ç	c SHIFT-ACCESS c	ç
SHIFT-ACCESS e	é	e SHIFT-ACCESS e	é
SHIFT-ACCESS g	æ	SHIFT-ACCESS, SHIFT-G	Æ
SHIFT-ACCESS h	ø	SHIFT-ACCESS, SHIFT-H	Ø
SHIFT-ACCESS j	å	SHIFT-ACCESS, SHIFT-J	Å
SHIFT-ACCESS k	ä	SHIFT-ACCESS, SHIFT-K	Ä
SHIFT-ACCESS n	~	n SHIFT-ACCESS n	ñ
SHIFT-ACCESS q	ç	e SHIFT-ACCESS q	è
SHIFT-ACCESS u	ü	u SHIFT-ACCESS u	ü
SHIFT-ACCESS v	ş	s SHIFT-ACCESS v	ş
SHIFT-ACCESS x	ê	e SHIFT-ACCESS x	ê
SHIFT-ACCESS y	ö	SHIFT-ACCESS, SHIFT-Y	Ö

SYMBOLS USED WHEN WRITING CODE

The following lowercase characters are used by PLATO authors to identify code elements to the system.

SHIFT-ACCESS , †

This is called a universal delimiter. Authors use it in code to separate elements of a command tag. It is most frequently used to separate various text tags following the "writec" command.

SHIFT-ACCESS Ø ‹

Left embed symbol. It allows authors to embed a variable in a text tag.*

SHIFT-ACCESS 1 ›

Right embed symbol.

MICRO

Used predominantly by authors, the MICRO key can work in one of two ways, depending on whether an author specifies a MICRO table within a lesson, (refer to section 4, Using Author Features). If no micro table is specified, the MICRO key produces the same characters as the ACCESS key, plus three additional functions: bold writing, writing in full capitals, and leftwards writing.

Other ACCESS keys are used to place text in a special position.

SHIFT-ACCESS SUPER

Moves the next single letter typed up one entire line on the PLATO display.

SHIFT-ACCESS SUB

Moves the next single letter typed down one entire line on the PLATO display.

ACCESS characters can always be produced by pressing SHIFT-□. If a lesson has not specified its own micro table (using a "micro" command), then a default micro table is used. When using this default micro table, the MICRO key behaves in the same way as SHIFT-□ (refer to section 4, Using Author Features).

* Often PLATO authors want to display the contents of a variable. Example: The date is stored in a variable called "date". The author wants to display the date. In this case, the variable containing the date is embedded in a text string. To embed a variable in a text string, these symbols are used. Therefore, he or she writes the following code:

```
write  The date is a, date
```

The student sees:

```
The date is 10/12/83.
```

The distinction between the MICRO key and SHIFT-□ is subtle. Remember that when using your own micro table, your micro table is associated with MICRO, while the ACCESS characters are associated with SHIFT-□.

SUPER

Use the SUPER key to write superscripts or to indicate exponentiation in an algebraic expression. Pressing SUPER causes the next character to appear 5/16 of a line higher than ordinary text. If the superscript contains more than one character, press SHIFT-SUPER to lock the keyboard into superscript mode. All typed text then appears as part of the superscript until you press SHIFT-SUB.

Pressing SHIFT-ACCESS SUPER causes the next character to appear one line higher than ordinary text (press SHIFT-ACCESS, release it, and press SUPER). Pressing SHIFT-ACCESS, SHIFT-SUPER locks the keyboard into this mode so that all typed text appears on the higher line until you press SHIFT-ACCESS, SHIFT-SUB.

SUB

The SUB key is similar to the SUPER key but produces subscripts rather than superscripts (that is, the character appears 5/16 of a line lower than ordinary text). Pressing SHIFT-SUB locks the keyboard into subscript mode. The keyboard stays in this mode until you press SHIFT-SUPER.

Pressing SHIFT-ACCESS SUB causes the next character to appear one line lower than ordinary text. Pressing SHIFT-ACCESS, SHIFT-SUB locks the terminal into this mode so that all typed text appears on the lower line until you press SHIFT-ACCESS, SHIFT-SUPER.

Capital Letters (without holding the SHIFT key down)

To type in capital letters (without holding the SHIFT key down), press the MICRO key, release it, and press the ÷ key. Only the letter keys will be displayed as capitals. Number and function keys such as 2 and + will be displayed as if no SHIFT key had been pressed. To return to upper and lowercase letters, press the MICRO key, release it, and press the ÷ key.

SHIFT-Lock (Viking terminals only)

SHIFT-Lock works like the shift key on a typewriter. The key will be found on the left side of the keyboard. The keycap displays a picture of a padlock. When pressed the first time it will lock the keyboard into uppercase alphabetic characters. By pressing the key a second time you will return to lowercase writing. This does not affect the way in which any other keys (except alphabet) work.

Bold Writing

To use bold writing, press the MICRO key, release it, and type "T". Typed characters will then be displayed large and bold (four times the size of standard characters). To return to standard, press the MICRO key, release it, and type "S".

If you are locked into typing uppercase letters (previously described) bold writing will also work.

To use bold writing when you are locked into uppercase (on an IST by using MICRO ÷ ; on a Viking by using MICRO ÷ or SHIFT-lock), you press the MICRO key, release it, and type "t". The t will automatically be a shifted T because you are already locked into uppercase typing.

Leftwards Writing

To use leftwards writing, press the MICRO key, release it, and type "Q". Characters will be displayed from right to left as they are typed. To return to rightwards writing, press the MICRO key and type "R". (Remember that leftwards writing will begin at your current arrow position. So, to write from right to left in any PLATO editor, you must press CR carriage return to begin writing at the right side of the display, press MICRO Q, and then enter your leftwards text.)

As with bold writing (previously described), leftward writing will also work if you are already locked into typing with uppercase letters. On an IST you would be locked in with a MICRO÷ . On a Viking you would use MICRO÷ or the SHIFT-lock key. To use leftwards writing while locked into uppercase, press MICRO, release it, and type "q". The Q will automatically be shifted because you are locked into uppercase writing. To return to rightwards writing, press MICRO, release it, and type "r". The R will automatically be shifted because you are locked into uppercase writing.

To switch to an alternate character set (such as Hebrew) and begin typing from right to left, follow these instructions instead: press CR to reach the right margin, press MICRO then Q for leftwards writing, press FONT (SHIFT-MICRO) for the alternate characters, then begin typing.

Authors can specify other characters to be displayed (up to 40) for any single keypress, when the MICRO key is typed within lessons by defining a micro table. For example, the W within a micro table can be defined as the command "write" plus the three remaining spaces of the command field. Once defined, those characters will be displayed when the MICRO key is pressed and released, and the letter W is typed. Other keys could represent other frequently used words or commands or several specially designed characters. Up to 40 characters can be defined for any of the lowercase MICRO keys, or up to 20 when both upper and lowercase keys are defined within the micro table.

Creating a micro table in a lesson file is one of the options available to an author when adding a block to a lesson file. System micro table functions, such as writing in capitals, can also be included in a user-defined micro table. For more information about defining your own micro table, refer to AIDS.

FONT (SHIFT-MICRO)

In addition to the permanent characters, the author can design as many as 126 other characters. These characters vary from lesson to lesson. When a lesson uses them, it usually informs the student. The student accesses them with the FONT key (SHIFT-MICRO). Unlike the SUPER SUB or ACCESS keys, you need not press FONT each time you want a character from the alternate character set (for example, the Cyrillic alphabet), where it remains until you press FONT again. The FONT key is most frequently used by authors. Lessons can be written to eliminate the need for students to use this key.

TAB

TAB functions like the tab key on a typewriter; it allows you to skip from the left margin of the display to a specified column on the same line. The TAB key differs from the tab key on a typewriter in that the author (using the "tabset" command in a lesson) rather than the student controls the positions of the columns; thus, the key has no effect if the lesson does not specify the use of the key.

CR (carriage return)

The carriage return (a shifted key on both IST and Viking terminals) returns the position of the text to be entered at an arrow to the left margin; however, this is not necessarily the left side of the display. Using a lesson as a student, the position at which your response begins also sets that column as the left margin for a carriage return.

On the IST, the CR and TAB keys are combined. Notice their separate locations on the Viking.

ACCESS

If the author enables the ACCESS key (□), the key functions in the same manner as the COPY key, except that each press of the square key copies a single character from the string above instead of an entire word. The same is true with the edit key.

CTRL (control)

This key, which is only available on IST-III and Viking terminals, is operative in standard data processing applications. It has no PLATO use. For more information about ASCII keyboard assignments refer to the IST-III Terminal Operator's Guide or the Viking Terminal Operator's Guide.

UNIQUE VIKING FUNCTION KEYS

PRINT, TAB, CR, SUPER, SUB, MICRO, FONT, HELP, TERM/ANS, ERASE, COPY, EDIT, BACK, LAB, DATA, ACCESS (□), NEXT, and STOP keys function in the same way on the Viking and IST terminals. The MICRO and FONT keys (combined on the IST) are separate keys on the Viking keyboard. The TAB and CR keys, combined on the IST, are also separate on the Viking.

M/REL (manual release) is similar to a short reset on an IST-III. Press this key to correct communications problems, such as ignored keypresses, extraneous lines, or text on the display.

CTRL, F1, F3 through F7, INSRT, DLETE, CLEAR, LF/ESC, BREAK, SETUP, and CR/DEL are not active for PLATO instructional use. For more information about other uses, refer to the Viking User's Manual.

APPENDIX B

GLOSSARY

GLOSSARY

B

Access list

A structured list of sign-ons and associated authorizations within PLATO accounts (i.e., an account access list), a notes file (i.e., a notes file access list), or lessons (i.e., a custom access list). Access lists allow the owners to delegate various editing and access privileges within accounts, notes files, and lessons.

Account

A named PLATO file through which all contracted PLATO resources are managed by a named account owner or designee. These resources include disk parts and network transfer units.

Account code

A security code that allows only people in a named account to access file or account information.

Account director

A person indicated in an account's access list by the account owner as having joint responsibility with the account owner to control resource use. Any number of account directors may be named.

Account owner

A user identified by sign-on name who controls the use of resources within a PLATO account.

Acoustic coupler

An electronic device that sends and receives digital data through a standard telephone handset. To transmit data, the digital signals are converted to audible tones that are acoustically coupled to a telephone handset. To receive data, the acoustically coupled audible signals are converted to digital signals.

Adapter

A device or series of devices designed to provide a compatible connection between the unit under test and the test equipment.

AIDS

An on-line reference manual containing information on the PLATO Author Language, Micro PLATO Language, and PLATO features.

Allocate

To reserve an amount of some resource in a computing system for a specific purpose. An example of this might be allocated disk parts in an account.

ANSI

American National Standards Institute, a group responsible for the development of standard character set OCR (most commonly referred to as ANSI OCR-A).

Archive

To store less-used information for future retrieval.

ASCII

American Standard Code for Information Interchange. A standard code consisting of 7-bit elements for information interchange among data processing communications systems.

Attach code

A security code that controls whether one lesson can attach another lesson (using the "attach" command). To do so, the "attach" code of the attaching lesson must match the appropriate "read" or "write" records code of the nameset, dataset, or group file being attached, or the "change" or "inspect" code if a lesson file is being attached.

Author

A person who uses PLATO features to develop instructional materials.

Author mode display

A display shown to authors after they have signed on to PLATO services. It is the display from which authors indicate which files they want to edit, or use as students would use them.

Backspace

To move one unit in the reverse or backward direction, as opposed to moving one unit in the forward direction. An example of this would be to move back one record, file, word, letter, or space.

Batch processing

The processing of jobs under the control of the computer's operating system, as opposed to interactive processing.

Binary

1. Pertaining to a characteristic or property involving a selection, choice, or condition in which there are two possibilities.
2. Pertaining to the number representation system having the radix of two.

Binary code

A code that makes use of exactly two distinct characters usually 0 and 1.

Binary digit

One of the two numerals in the binary number system. This digit may be zero (0) or one (1) and may be equivalent to one of a pair of conditions, as yes or no, on or off. It is usually called a bit.

Bit

See binary digit.

Block

A 320-computer-word subdivision of a lesson. Different types of blocks are used to store different kinds of information for the PLATO system.

Block diagram

A graphical representation of the various parts of a system showing their interrelationships.

Block length

The total number of records, words, or characters contained in one block.

Cable

Assembly of one or more conductors within an enveloping protective sheath so constructed as to permit the use of the conductors separately or in groups.

CDC

Control Data Corporation.

Change code

A series of up to 10 typed characters or an account or group name chosen for every PLATO file to assure file security. Only authors within the designated account or group, or authors who know the designated series of typeable characters composing the change code, can change the contents of a given file. Most PLATO files contain change codes.

Character

An 8-dot by 16-dot area on the Control Data terminal (the entire screen is 512 dots by 512 dots). Each of the dots within an 8- by 16-dot grid can be displayed or not displayed, thereby presenting letters, numbers, punctuation, pictures, or characters. A character is also referred to as a 6-bit segment of the 60-bit computer words used by Control Data CYBER computers. Each computer word can contain 10 characters.

Character set

A set of up to 126 characters (see Character) designed by an author to be presented on the Control Data terminal. A group of PLATO character sets can be found in lesson "charsets". Charset standard in lesson "charsets" contains some frequently used PLATO characters.

Character spacing

The horizontal distance between two adjacent characters.

Charset

Refer to Character set.

CMR

Central memory resident (operating system executive).

Code

A series of PLATO Author Language or Micro PLATO Language statements, or a security codeword.

Coding

The act of programming. Writing code.

Command

The first part of a PLATO Author Language or Micro PLATO Language statement placed in the leftmost margin of a lesson block. The command indicates the action to be performed. For example, the "write" command directs text placement on the display.

Common

An area of memory reserved for the purpose of being able to be read by two or more programs, in the same or in multiple processors, to allow for communication between them.

Common code

A security code that controls whether or not a lesson can access a permanent common stored in another lesson.

Communications error

Interference on the communications lines between the central computer and a terminal which causes display distortions.

Compatible

Refers to computers capable of accepting and processing information prepared for or by another computer without conversion or code modification.

Compiler

A program that translates a programming language such as FORTRAN or COBOL into an assembly language and, often, into machine language. A compiler may generate many machine instructions for a single symbolic statement.

Computer

A machine in which stored instructions could operate on other instructions to modify them. It is a device capable of solving problems by accepting data, performing prescribed operations on the data, and supplying the results of these operations. Various types of computers are calculators, digital computers, and analog computers.

Computer word

1. A combination of 10 letters, numbers, and/or spaces (capital letters count as two characters).
2. Sixty bits.
3. Ten 6-bit characters. Also referred to as a variable.

Condense

To change PLATO Language code into a binary code readable by the computer.

Condense error

A line of code in a lesson that cannot be interpreted by the PLATO software. Usually, such code has not been entered in the proper form or contains references that cannot be found. Such lines are identified during the process of condensing a lesson and are displayed to authors with an indication of the type of error.

Connector

A means of mechanically allowing separation or connection of one or more electrical circuits or devices.

Convert

To change the representation of data from one form to another, for example, to change numerical data from binary to decimal or from cards to tape.

Copy

To reproduce information leaving the original information unchanged. The physical form of the result may change.

Courses

Sets of lessons prepared by authors for students. Lessons are usually grouped into courses using a router like "mrouter" or PLM.

Crash

An unexpected and therefore unannounced PLATO service interruption, usually due to hardware failures.

Curriculum

A hierarchical study plan composed of courses, modules, and lessons.

Cursor

A movable marker used as a reference point on a display screen.

CYBERNET

A section of Control Data's business that offers computing resources in a timeshared, remote batch, or batch environment.

Data collection

The act of bringing data from one or more points to a central point.

Data communication

The transmission of data from one location to another.

Data conversion

The process of changing data from one form of representation to another.

Datafile

A special file type that collects information, usually student data. Datafiles are used predominantly as a formative evaluation tool. An instructor needs an author's help to set up and use a datafile. Datafiles cannot be used with published courses.

Data processing

The production of records and reports. Computing.

Dataset

An organized collection of information.

Default file code

A security code chosen by an account's owner which is then automatically assigned to all files created in that account. Default security codes establish minimum security requirements.

DEL

Delete or remove.

Delete

Permanently remove from the computer's disk storage.

Dial-up

The use of a dial or pushbutton telephone to initiate a station-to-station telephone call.

Direct memory access

An input/output system that allows peripheral devices to access a computer's central storage area without help from the computer's central processing unit (CPU). This technique is especially common in microcomputers.

Disk

See magnetic disk.

Disk drive

The mechanism that hold a flexible disk.

Disk file

A disk file is another computer storage device. It consists of phonograph records like disks, each coated with a magnetic recording surface like tape. The data base is stored on a disk file.

Disk parts

An amount of disk space in the computer's disk storage from which files can be created and in which information can be stored; the equivalent of 2240 PLATO computer words, or one part (seven blocks) of a lesson file.

Display

The set of text and/or graphics seen on the terminal screen at one time.

Documentor

A special type of file with its own editor, used for writing and maintaining technical specifications and other documents. All user types can be given access to Documentor files. No programming knowledge is needed to use a Documentor file.

Downline

The direction of output flow, from host (computer) to terminal.

Downline load

The process by which one node in a computer network transfers an entire program (task) to another processor and causes it to be executed.

Easy editor

The PLATO notes editor available to all users, but primarily used by instructors and students. Contains fewer options than the standard editor.

ECS

Refer to EM.

Edit

To change any information in a note, document, student record, or file.

Editing directives

Instructions used to tell the PLATO software you want to insert, delete, or change information.

Editor

Any lesson that allows users to insert and change information in files. PLATO editors exist for student records (group editor), documents ("Documentor"), notes (lesson "notes"), and so on. Users can also write their own editors.

EM

Extended memory; used to mean both extended core storage and extended semiconductor memory.

Erase

To remove data from storage without replacing it.

ESM

Refer to EM.

Execute

To carry out an instruction or perform a routine.

Exit

To leave; when a lesson is complete you exit.

Extended core storage

Refer to EM.

Extended semiconductor memory

Refer to EM.

External storage

A storage device outside the computer that can store information in a form acceptable to the computer, for example, cards and tapes.

File

A delegated amount of space in a system's disk storage in which information can be stored. Each file has a name length and standard structure. A file can be thought of as an electronic notebook containing information in fixed-sized compartments.

Flexible disk

Refer to floppy disk.

Floppy disk

A magnetic recording on a flexible 45-rpm record-like disk.

Flow

A general term used to indicate a sequence of events.

Font

A set of graphic shapes, which may be alphabetic, numeric, or both and may include symbols.

Function key

A specific key on a keyboard, for example CR or LF, which, when operated, causes a receiving device to perform a certain mechanical function so that a message will be received in proper form.

Graphics

A term used to describe the hardware and software activities associated with the displaying of vector or pictorial information; characters that can be printed or displayed.

Graphics editor

A process that allows the user to perform interactive modifications or to create graphic displays.

Grid

A set of points placed at predefined locations (x and y coordinates) and normally used to define that the position of subsequently placed components will be on controlled coordinate values. By positioning on grid points, instead of anywhere, you reduce the requirements for calculating and storing the coordinates of a placed component to some higher degree of accuracy.

Group

1. A number of users whose user records are all located in the same group file.
2. A specific file type in which users are registered; it tells the system what each user is authorized to do, and stores data on each user.

Group code

A security code that allows only people in a named group to access file or account information.

Hardware

A piece of physical equipment, for example, mechanical, electrical, or electronic devices. Contrast with software.

Help sequence

A sequence of instructional material or background information in a lesson reached by pressing HELP.

Index

An ordered reference list of the contents of a file or document, together with keys or reference notations for identification or location of those contents. Refer also to menu.

Index lesson

A lesson that presents an index or list of lessons for students to study.

Information retrieval

The methods and procedures for recovering specific information from stored data.

Information system

The network of all communication methods within an organization. Information may be derived from many sources other than a data processing unit, such as by telephone, by contact with other people, or by studying an operation.

Initialize

To set counters, switches, and addresses to zero or other starting values at the beginning of, or at prescribed points in, a computer routine. To start new.

Initiate

Start. Sometimes used synonymously with initialize.

Insert

To type.

Inspect

An access level. The ability to read any information in a file, with no ability to alter or add to the information seen.

Inspect code

A security code used within a file or account that allows users to read information, provided they know or match the inspect code.

Instruction

The two components, command and tag, of a PLATO Language statement.

Instructional management tool

One of five organization/delivery mechanisms included in PLATO features to individualize curricula for students' use. Refer to Index lessons, "mrouter", PLATO Learning Management (PLM), router lesson, and "mprouter".

Instructor

A user who is responsible for registering students in a group, assigning lessons, and monitoring student progress.

Instructor file

A file used in conjunction with "mrouter" or "mprouter" (a PLATO instructional management tool) which contains specific information about a curriculum's components and design, such as lesson titles, lesson file names, how lessons are grouped into modules, and the order of module and lesson presentation.

Interface

A common technique that allows the relationships of key words in an item or document to be described so that very specific inquiries can be answered without false retrievals due to miscommunication.

Internal storage

A storage device that is an integral physical part of a computer and is directly controlled by the computer so that information is automatically accessible to the computer, for example, magnetic core storage.

Interpreter

A program that translates and executes each source language expression before translating and executing the next one.

Intersystem

Pertaining to exchanges between two or more systems offering PLATO service. Intersystem notes are notes sent between or among systems offering PLATO service.

Job

An arbitrarily defined parcel of work submitted to a computing system.

Jump

An instruction providing the ability to depart from the normal sequence of executing instructions in a computer. To depart from the normal sequence of execution.

Keypad/keyboard

The typewriter-like part of a PLATO terminal that is used to enter information. A standard typewriter keyboard, mathematical operations keys, and function keys are included.

Leslist

A list of lesson file names that are frequently referenced in the same or other lessons.

Lesson execution error

An error which causes a lesson to stop working because the PLATO software cannot determine what should be done next. Execution errors are usually caused when a program has not anticipated a response or a programming error was made in the lesson.

Lesson file

The type of file used to write PLATO lessons into which PLATO Author Language or Micro PLATO Language code is inserted. Consists of parts and blocks.

Library

An organized collection of standard check-out programs, routines, and subroutines which can be used to solve many types of problems and parts of problems. An organized collection of documents for study or reference.

Library routine

A checked-out outline, which is maintained in a library as an aid to programmers and which may be incorporated into a larger routine.

Light-sensitive pen

A photo sensing device similar in size to an ordinary fountain pen and used to interrupt screen displays by means of light sensing optics.

Lineset

A set of user-designed, line drawings. Each member of the set can be accessed by a single key press, like characters in a character set.

List

A set of data.

Load

To put data into internal storage. To place a flexible disk into a disk drive.

Loop

A sequence of instructions that is repeated until a terminal condition prevails.

Magnetic disk

A flat circular plate, resembling a 45-rpm record, with a magnetic surface on which data can be stored by selective magnetization of portions of the flat surface. Sometimes referred to as a floppy disk.

Magnetic storage

A storage device that utilizes the magnetic properties of materials to store information, for example, magnetic cores, tapes, and films.

Main storage

The general-purpose storage of a computer, program-addressable, from which instructions may be executed and data can be loaded directly into registers.

Master file

A main reference file containing relatively permanent information.

Menu

The various options within an interactive application program. See also index.

Merge

To combine two or more files into one, usually in a specified order. Merge is often used synonymously with collate.

Message

A group of words, variable in length, having meaning as a whole and always handled as a group.

Microcompressor

A basic element of a central processing unit that is a single integrated circuit. A microprocessor has a limited instruction set which is usually expanded by microprogramming. A microprocessor requires additional circuits to become a suitable central processing unit. Also refer to microcomputer.

Microcomputer

A computer that is constructed using a microprocessor as the basic element. A microcomputer combines all of the CPU, memory, and peripheral functions of a computer on a chip of silicon.

Micro PLATO language

The Control Data Language used for microprogramming.

Mode

A method of operation or of data representation, for example, alphanumeric mode, binary mode, or interpretive mode.

Modem

A device that converts data into sound (and back) which can then be sent over normal phone lines. Generally, the higher the baud rate a modem can handle, the more it costs.

Modification (mod) words

An optional feature within an editor which automatically documents changes made in each line of code or text in a lesson.

Modify

To alter a part of an instruction or routine. The modification may be permanent or it may affect only the current execution.

Module

A group of lessons relating to the same basic subject, and studied as one instructional unit.

Monitor

To supervise and verify the operation of a program during its execution; to watch as someone else makes a presentation, that is, to be in a monitor mode.

Monitor mode

The state of one user who sees the same display on his/her own screen that another user is seeing on hers/his. When in monitor mode, the user has no control over his or her display.

"mprouter"

An instructional management lesson which contains the mechanics for designing and presenting instructional lessons to students. The Micro PLATO Language is used with "mprouter".

"mrouter"

An instructional management router which contains the mechanics for designing and presenting instructional units (modules) to students.

Multi access

The capability of a computing system to collect and distribute data through several terminals. The capability of part or all of memory to allow simultaneous data flow via several independent channels.

Multiple

A user who shares a student sign-on with several other users and for whom no records are kept. One sign-on which is shared by a number of users.

Multiprocessing

Utilization of two or more processors as a single mainframe to logically or functionally divide jobs or processors, and to execute various programs or segments asynchronously and simultaneously.

Network

Electrical, a network may be as small as one circuit or consist of many circuits in a unit of digital hardware content usually defined by either a functional or a logical boundary.

Network Processing Unit (NPU)

The collection of hardware and software that switches buffers and transmits data between terminals and host computers.

Notes

Messages stored in special notes files which contain communications between and among defined sets of PLATO system users. A set of 20-line messages.

Notes file

A special file that stores notes.

NPU

Refer to Network Processing Unit.

Numeral

A conventional symbol representing a number.

Numeric

A machine vocabulary that includes only the primary numbers as contrasted to alphanumeric, which has both letters and numerals.

Off-line

A function performing or capable of performing in a stand-alone state and not available as a resource to a higher processor. Pertaining to equipment or devices not under direct control of the central processing unit.

On-line

Operations executed directly by a computer in real time. An operation in which peripheral devices are connected directly to the computer central processor.

On-line author listing

A list of PLATO authors and instructors and biographical information about them. Accessed through lesson "authors".

Operating system

The software that guides a processing system in the performance of its tasks by controlling the execution of computer programs and by providing support services to programs and programmers.

Order

To put items in a given sequence.

Output

Data that has been processed. The process of transferring data from an internal storage to an external storage.

Part

A subdivision of a file capable of storing up to 2240 computer words. A subdivision of a file containing 7 blocks of up to 320 computer words each.

Password

A name, known by the computer and the user, used for access security by the network.

Personal help

On-line help received from an author, instructor, or PLATO consultant through TERM-consult, TERM-ask, or TERM-talk.

Personal Notes

Private 20-line messages between two users on the same or multiple systems offering PLATO service. (Personal notes can be sent to any system connected to the PLATO network.)

PLATO Author Language

The computer language used for writing PLATO lessons. PLATO Author Language refers to the version of the language used to prepare lessons for use on the PLATO network. The Micro PLATO Language refers to the version used to prepare lessons for use on Control Data microcomputers.

PLATO Catalog of Published Courseware

An on-line catalog that indexes all published PLATO courses by title, author, subject, and filename. It also provides information about the contents and structure of each published PLATO course.

PLATO Facilities display

The display shown to all instructors at the end of the sign-on sequence. From this display all instructor options can be reached.

PLATO Learning Management (PLM)

The PLATO computer-managed instruction capability is designed to provide student routing, diagnostic testing, selection of appropriate learning resources, and comprehensive record keeping to support individualized instruction. Authors use prompted editors to construct PLM modules and curricula without programming.

PLATO name

The first part of a user's sign-on which is registered in the PLATO group. It can contain up to 18 characters, including spaces and excluding capitals.

PLATO password

The third part of the user's sign-on process. A secret word selected by each user to secure her/his sign-on.

PLATOSCRIBE application

Refer to "s/subscribe".

Presentor

A PLATO service that allows you to select and organize a group of displays which will be shown to monitors participating in a teleconference.

Prints

Paper copies of on-line files.

Programmed help

A help sequence coded in a lesson by the lesson author and reached by pressing HELP.

Prompt

Any message or symbol from the computer system informing you of possible actions or operations. A guide to the operator in use of the system.

Published lesson

A course that is copyrighted and included in the PLATO Catalog of Published Courseware. Published courses that have been through a careful review process, should be free of errors, and have guaranteed availability on all Control Data systems offering PLATO services. Published lessons are never deleted or altered without notice.

Record

A collection of related items of data treated as a unit.

Report generation

Production of complete data processing reports by giving only a description of the desired content and format of the output reports and certain information contained in another form.

Resource

An information-system component (hardware or software) that can serve a user requirement. Resources include processing time, storage devices, data bases, and language compilers.

Response time

This is the time the system takes to react to a given input. If a message is keyed into a terminal by an operator and the reply comes from the computer, response time may be defined as the time interval between the operator pressing the last key and the terminal typing the first letter of the reply.

Restart

To return to a previous point in a program and resume operation from that point.

Retrieve

To find and select specific information.

Router lesson

A special PLATO lesson written by an author to organize lesson groupings and sequencing and to define some student/course data collection.

Save buffer

A feature which temporarily stores lines of text or code (up to 320 words), allowing a user to move that text or code to another file, or another location in the same file.

Scan

To search for something.

Screen

The portion of the terminal on which output from the computer is displayed.

Security codes

Codewords assigned by the author of a lesson to limit who can see or change the lesson. Also includes codewords that control access to the lesson from other lessons: access to any common blocks in the lesson and access by using the "jumpout", "use", and "attach" commands.

Service

A collection of consecutive operations and procedures required to accomplish a specific objective.

Sign off

To end a PLATO session by repeatedly pressing SHIFT-STOP.

Sign-on

The three user identification elements, PLATO name/PLATO group/PLATO password, registered in a PLATO group for each user.

Sign-on sequence

Entering a user's name, group, and password to gain access to PLATO services.

Site

A group of terminals that share a pool or specified amount of extended memory.

Software

Instructions (programs and routines) that direct the operation of a computer system. The PLATO software is a set of COMPASS and PLATO Language programs. To distinguish user software from PLATO software, user's programs are sometimes referred to as courseware.

Standard editor

The PLATO editor used for notes and lessons.

Statement

The two components (command and tag) of a PLATO Author Language instruction.

Statistical analysis

One of the four main techniques of operations research. Data gathering, arranging, sorting, sequencing, and evaluating are common statistical analyses.

Storage device

A device into which data can be inserted, retained, and retrieved.

Student

A person who uses PLATO services to study assigned lessons; or, a person who uses a student record.

System personnel

People responsible for maintaining PLATO service, including PLATO consultants and Hotline personnel.

"s@confer"

A PLATO lesson used to initiate a teleconference. Also refer to TERM-confer.

"s@present"

Refer to Presenter.

"s@scribe" ("s@scribe")

Router that gives you access to a selected group of PLATO features.

Tag

The second part of a PLATO Language statement.

Teleconference

A PLATO service that allows up to 200 users to view the same screen display at the same time. This may also be used with TERM-talk.

Template

A student record used as a model or pattern for other student records.

TERM-ask

A PLATO feature that allows users to request and receive help from defined sets of authors and instructors.

TERM-calc

A PLATO feature that allows users to calculate mathematical expressions.

TERM-comment

A PLATO feature that allows users to write a note to their instructor or the author or maintainer of any lesson they are using.

TERM-confer

A PLATO service that allows users to join in a Teleconference.

TERM-consult

A PLATO feature that allows users to contact a PLATO consultant for help while using the system.

Terminal

A device (or set of devices) that may act as a receiver and/or transmitter of data.

TERM-spell

A PLATO feature that allows users to look for the correct spelling of a word. Available only to authors.

TERM-talk

A PLATO feature that allows two users of the same system to communicate by typing messages on their displays.

TERM-time

A PLATO feature that displays the current time and date.

Text editor

Software that allows modification of files of text and manages the inserting, deleting, and moving of text.

Transfer

To convey control from one mode or one place to another.

Translate

To change information from one language to another without losing the meaning.

Transmit

A PLATO service that conveys information to a new location; to convey information to a new location.

Unmatchable code

A security code that cannot be matched. In some cases, users who know or match a file's change code can inspect the file. Refer to AIDS for unique characteristics of unmatchable codes.

Use code

A security code that controls whether one lesson can use another.

User

A person who has a PLATO sign-on. Refer to User types.

User list

An on-line list of all authors and instructors who are currently using PLATO services and who wish to be listed.

User record

A section of a group file containing specific information about a user and that user's interaction capabilities and PLATO history.

User types

Any of the following sign-on categories: student, multiple, instructor, or author. One's user type generally identifies those system options and features available to him/her.

Verify

To confirm, substantiate, and assure that an activity or condition has been implemented in conformance with the specified requirements.

Word processing

The science of and the computer systems designed to handle words and text as input and output, rather than to perform scientific calculations or control read-time processes.

INDEX

Access

- Access list block 4-107 (also refer to Block)
- Access list updating 5-11
- Account access list 5-7,37 (also refer to Security)
- Account access options 5-11
- Custom access list 4-107 (also refer to Security)
- Print access (refer to Print)
- System access to accounts 5-12
- System access to groups 3-12

Account

- Access list (refer to Access)
- Access list updating (refer to Access)
- Access options (refer to Access)
- Account archive options (refer to Archive)
- Account directory 5-5
- Account options 5-3
- Account security (refer to Security)
- Account transactions 3-3
- Change general file information (refer to File)
- Connect notes files across systems (refer to Notes)
- Copy contents of a file (refer to File)
- Copy of a file (refer to File)
- Creating files (refer to Files)
- Current users in account 5-4
- Default security (refer to Security)
- Destroying files (refer to Files)
- Display file data (refer to File)
- File management options 5-4,20 (also refer to File)
- File types (refer to File)
- General account information 5-1
- Group records report generator (refer to Group)
- Inspect file information (refer to File)
- Interaccount options 5-4,32
- Lengthen a file (refer to File)
- Leslist of account files 5-24 (also refer to Files)
- List archived files in account (refer to Archive)
- List current account users 5-25
- List files in your account 5-22 (also refer to Files)
- List last editor of files (refer to Files)
- Managing file space (refer to File)

Network options (refer to Network)

Network transfer unit (refer to Network)

Print request access options (refer to Print)

Renaming files (refer to File)

Reorganize a file (refer to File)

Report generator options 5-4,25

Reviewing all file options 5-23 (also refer to File)

Shorten a file (refer to File)

System access to account (refer to Access)

Transmit PLATO files to NOS 5-4,30

Using your PLATO account 3-19; 5-3

Add a student to a router (refer to Router)

AIDS

Instructor AIDS 2-42; 3-3

Listing of display commands 4-99

PLM AIDS 3-3 (also refer to PLM)

Quick reference 4-77

Student AIDS 2-20

Using AIDS 4-12

Alarm 4-119

Appending notes (refer to Notes)

Archive

Archive options in accounts 5-4,29

Archived notes 4-31

List archived files in account 5-22

Asking questions (refer to TERM-ask)

Author

Author features introduction 1-3; 4-1

Author index 4-50 (also refer to Published courseware)

Author mode display 4-4

Author options, additional 4-123

Author records 4-3

Directory of PLATO authors 4-51

Automatic sign on (refer to Sign on)

Backups (refer to Security)

Block

Access list block 4-107

(also refer to Access)

Block creation 4-68

Block listing display 4-37

Block listing options 4-115

Block types 4-104

Charset block (refer to Character)

Common block 4-104

- Copy-a-block 4-107
 - Leslist block 4-106
 - Listing block 4-106
 - Micro block 4-105
 - Text block 4-105
 - Vocabulary block 4-105
- Catalog**
- Catalog of published courseware 2-20; 4-6,46
 - Character catalog 4-92 (also refer to AIDS)
- CDC 110 with IST-III (refer to Terminals)**
- CDC 110 with Viking (refer to Terminals)**
- Central prints (refer to Print)**
- Character**
- Character catalog 4-92 (also refer to AIDS)
 - Character creation options 4-84
 - Character design display 4-86
 - Character set keys 4-89
 - Charset block 4-84
 - Charsets 4-83
 - Copying characters 4-92
 - Creating characters and line drawings 4-83,94
 - Creating displays for lessons 4-79
 - Creating multiple characters 4-90
 - Creating your own characters 4-84,88
 - Function keys for editing drawings 4-97
 - Linesets 4-83,97,98
 - Linesets library 4-99
 - Listing of display commands (refer to AIDS)
 - PLATO character 4-7,80
- Coarse grid 4-80**
- Code files (refer to Files)**
- Codewords, lesson security (refer to Security)**
- Commands**
- Listing of display commands 4-99 (also refer to Character)
 - Micro PLATO language commands (refer to Micro PLATO language)
 - PLATO author language commands 4-103
- Commenting on lessons and features (refer to TERM-comment)**
- Common block (refer to Block)**
- Communications**
- Communication errors 2-16
 - Communications with notes (refer to Notes)
 - Communications with group members 2-15
 - Handling communication problems 2-16
 - Interactive communications 3-3 (also refer to Term)
 - Network communications 1-15
 - Troubleshooting 2-17
- Computer word 4-7**
- Condensing a lesson (refer to Lesson)**
- Consulting help (refer to Term)**
- Copy**
- Copy a block (refer to Block)
 - Copying characters (refer to Character)
 - Copying records from another group (refer to Group)
 - Copying student data (refer to Lesson)
- Courseware (refer to Published courseware)**
- Creating files (refer to File)**
- Creating PLATO lesson displays (refer to Lesson)**
- Current users in an account (refer to Account)**
- Curriculum**
- Design 3-25,27
 - Design modules 3-32
 - Special Instructor File Options 3-34
 - Structures 2-1; 3-23
- Custom access list (refer to Access)**
- Damaged files (refer to Security)**
- Data collection files (refer to Files)**
- Datafiles (refer to Files)**
- Dataset files (refer to Files)**
- Default security codes (refer to Security)**
- Delete a student (refer to Router)**
- Design modules (refer to Curriculum)**
- Director options in notes (refer to Notes)**
- Directory of PLATO authors (refer to Authors)**
- Disk**
- Disk author options 4-129
 - Disk drive controls 1-12
 - Disk duplication 4-133
 - Disk preparation, "mprouter" 4-127 (also refer to Router)
 - Disks, private 4-130
 - Disks, public 4-130
 - Displays (refer to Character)
 - Handling flexible disks 1-14
 - Master flexible disk drive 1-14
- Display file data (refer to File)**
- Displays for PLATO lessons (refer to Character)**
- Documentation features (refer to Documentor)**
- Documenting lesson changes (refer to Lesson)**
- Documentor 2-20; 4-56**
- Drawing characters and lines (refer to Character)**

- ECS 4-101
- Edit
- Advanced editing directives 4-114 (also refer to Lessons)
 - Changing code 4-73
 - Easy notes editor 4-43 (also refer to Notes)
 - Editing characters (refer to Character)
 - Editing directives, notes 4-38 (also refer to Notes)
 - Editing directives, PLATO lesson (refer to Lessons)
 - Editing lesson files 4-68,70 (also refer to Lessons)
 - Editing notes 4-40 (also refer to Notes)
 - ID/SD 4-71
 - Inserting code 4-73 (also refer to Lessons)
 - Line drawings (refer to Character)
 - Mod words 4-115
 - PLATO lesson editor (refer to Lessons)
 - Positioning code 4-74 (also refer to Lessons)
 - Restoring changed code 4-74 (also refer to Lessons)
- Ending a microcomputer lesson (refer to Microcomputer)
- Ending a PLATO lesson (refer to Lessons)
- ESM 4-101
- Extended core storage 4-101
- Extended memory usage and charges 4-101
- Extended semiconductor memory 4-101
- F catalog 4-46 (also refer to Published courseware)
- File
- Account options (refer to Account)
 - Archive options (refer to Archive)
 - Change general file information 5-18
 - Code files 4-18 (also refer to Edit)
 - Connect notes files across systems (refer to Notes)
 - Conversions 4-17
 - Copy contents of a file 5-18
 - Copy of a file 5-17 (also refer to Network options)
 - Creating files 5-16
 - Damage to files (refer to Security)
 - Data collection files 4-18
 - Datafiles 3-34
 - Dataset files 4-18
 - Destroying files 5-17 (also refer to Network options)
 - Display file data 5-4,21
 - Display incomplete file transfer request (refer to Network options)
 - File management options (refer to Account options)
 - File name index, courseware (refer to Published courseware)
 - File parts 4-7
 - File sequencer, notes (refer to Notes)
 - File space management 5-16
 - File types 5-2
 - Inspect file information 5-20,25
 - Intersystem file security (refer to Security)
 - Lengthen a file 5-17
 - Leslist of account files 5-24
 - Lesson files (refer to Lesson)
 - List current account users (refer to Account)
 - List files in your account 5-22
 - List last editor of file 5-25 (also refer to Edit)
 - Nameset files 4-18
 - Network options (refer to Network)
 - Protecting PLATO files (refer to Security)
 - Renaming files 5-17
 - Reorganize a file 5-17
 - Report generator options (refer to Account)
 - Review all file options (refer to Account)
 - Scanning a file (refer to Filescan)
 - Security codewords for files (refer to Security)
 - Shorten a file 5-18
 - Transmitting PLATO files (refer to Account)
 - Understanding structure 4-7
- Filescan 4-117
- Fine grid 4-80
- Flag settings, user (refer to User)
- Flexible disk drives (refer to Disk)
- Flexible disk handling (refer to Disk)
- Flexible disk routers (refer to Router)
- Forwarding notes (refer to Notes)
- General notes (refer to Notes)
- Getting help (refer to Help)
- Giving help (refer to Help)
- Graphics 2-20 (also refer to Character)
- Group
- Associated files 3-10
 - Copying records from another group 3-38
 - General group information 3-10
 - General notes (refer to Notes)
 - Group data 3-10,37
 - Group operations 3-16
 - Group records report generator 5-4,28

Monitoring group members 3-37
Security (refer to Security)
Templating records 3-37
Using the PLATO group 3-9
GUIDE 2-20; 4-59
GUIDE aids 2-20

Help

Giving help 3-42
Help editing (refer to Edit)
Help reading notes (refer to Notes)
Hotline 2-17
Receiving help 3-41; 4-12
Requesting code editing help 4-76;
(also refer to Edit)
Requesting help 2-9
TERM-ask (refer to Term)
TERM-consult (refer to Term)
Hotline (refer to Help)

ID/SD 4-71 (also refer to Character)
Incomplete file transfer requests (refer to
File)
Index module 3-32 (also refer to Lessons)
Index of published courseware (refer to
Published courseware)
Indexed lessons (refer to Lessons)
Inserting code (refer to Edit)
Inspect file data (refer to File)
Instructional management tools 3-26,43
(also refer to Lessons)
Instructor features introduction 1-3; 3-1
Instructor records (refer to Lessons)
Interaccount options (refer to Account
options)
Interactive communications (refer to
Communications)
Intersystem file security (refer to
Security)
Intersystem notes (refer to Notes)

Key (refer to Keyboard)
Keyboards

Access characters as accent marks A-15
Frequently used function keys A-4
Function keys for editing drawings
(refer to Character)
Introduction 1-8; A-1
IST character keys A-1
IST function keys A-2
IST keyboard, all characters A-7
IST keyset A-1

Leftwards writing A-18
Less frequently used function keys A-6
Symbols used to write code A-16
Viking British keyboard A-12
Viking character keys A-2
Viking Danish keyboard A-14
Viking French keyboard A-9
Viking function keys A-3,19
Viking German keyboard A-10
Viking keyboard, all characters A-8
Viking keyset A-2
Viking Spanish keyboard A-13
Viking Swedish/Finnish keyboard A-11

Leslist block (refer to Block)
Leslist of account files (refer to Account)
Leslist options 4-17
Lessons

Advanced editing directives (refer to
Edit)
Block listing display (refer to Block)
Block types (refer to Block)
Changing code (refer to Edit)
Characters, your own (refer to
Character)
Charsets (refer to Character)
Codewords (refer to Security)
Condensing a lesson 4-77
Copying student data 4-131
Create sequences of lessons 3-32
Creating blocks (refer to Block)
Creating displays 4-79
Designing lessons (refer to Curriculum)
Documenting lesson changes 4-115
Editing lesson files (refer to Edit)
Ending a PLATO lesson 1-26
File structure (refer to Files)
Guidelines for writing lessons 4-100
Indexed lessons 2-5; 3-26
Inserting code 4-73 (also refer to
Edit)
Instructional management tools 3-43
Instructor records 3-39
Leslist block (refer to Block)
Lesson data summary 3-50
Lesson execution errors 2-18
Lesson files 4-62 (also refer to File)
Lesson publication 4-116 (also refer
to Published Courseware)
Lesson sequencing 4-130
Lesson summary 3-50
Listing block (refer to Block)
Micro block (refer to Block)
Micro PLATO language (refer to Micro
PLATO language)
Microcomputer lesson use (refer to
Microcomputer)

- Performance summary 3-50
- PLATO characters (refer to Character)
- PLATO courses and curricula (refer to Curriculum)
- PLATO courses on microcomputer (refer to Microcomputers)
- PLATO Learning Management (refer to PLATO learning management)
- PLATO router (refer to router)
- Positioning code 4-74 (also refer to Edit)
- Registering author information (refer to Register)
- Registering lesson information (refer to Register)
- Requesting help (refer to Help)
- Restoring changed code 4-74 (also refer to Edit)
- Reviewing and studying lessons 3-22
- Security codewords (refer to Security)
- Sign on method (refer to Sign on)
- Starting a PLATO session (refer to Sign on)
- Student data summary 3-50
- Student records 3-47
- Student roster 3-47
- Studying on microcomputers (refer to Microcomputers)
- Studying on the network 2-3 (also refer to Network)
- Taking PLATO lessons 2-3 (also refer to Network)
- Text block (refer to Block)
- Vocabulary block (refer to Block)
- Writing PLATO lessons 4-26 (also refer to Edit)
- Line drawings (refer to Character)
- Lineset (refer to Character)
- Lineset library (refer to Character)
- Listing block (refer to Block)
- Local prints (refer to Print)
- Managing file space (refer to File)
- Micro block (refer to Block)
- Microcomputers
 - CDC 110 with IST-III 1-10,12 (also refer to Terminal)
 - CDC 110 with Viking 1-10,12 (also refer to Terminal)
 - Disk drive controls (refer to Disk)
 - Ending your microcomputer session 2-24 (also refer to Lessons)
 - Master flexible disk drive (refer to Disk)
 - Micro PLATO router (refer to Router)
 - "mprouter" (refer to Router)
 - Micro PLATO Station 1-10,12 (also refer to Terminal)
 - Studying on microcomputers 2-21 (also refer to Lessons)
 - User registration 1-28 (also refer to Sign on)
 - Using microcomputer courses 3-43 (also refer to Lesson)
- Micro PLATO Language
 - Micro PLATO Language 4-125,133
 - Micro PLATO levels 4-117,134
 - Micro PLATO Language security (refer to Security)
 - PLATO courses written in micro PLATO language 2-23; 4-125
 - Preparing Micro PLATO lessons 4-125
- Mod words (refer to Edit)
- Monitoring group members 3-37 (also refer to Group)
- Multiple characters (refer to Character)
- Nameset files (refer to Files)
- Network options 5-32 (also refer to Account)
- Network transfer units 5-39
- Network user registration (refer to Register)
- Notes
 - Appending notes 4-45
 - Archived notes (refer to Archive)
 - Attaching a notes file 4-36
 - Connect notes files across systems (refer to Network options)
 - Director options 4-45
 - Easy notes editor 4-43 (also refer to Edit)
 - Editing notes (refer to Edit)
 - Forwarding notes 4-45
 - General notes 4-26,31
 - Help with options 4-44 (also refer to Help)
 - Intersystem notes 4-38
 - Managing personal notes 3-40
 - Notes editor 4-38 (also refer to Edit)
 - Notes file sequencer 4-32
 - Personal notes 2-12; 4-6,35,119
 - Published courseware (refer to Published courseware index)
 - Student notes 2-12; 4-38
 - Using general notes (refer to General notes)
 - Using lesson notes 4-36 (also refer to TERM-comment)
 - Using notes 3-40; 4-26
 - Writing notes (refer to Edit)
- NTU 5-39 (also refer to Network transfer unit)

On-line author list 2-20 (also refer to Author)
Orienting new users (refer to User)

Password (refer to Security)
Performance summary (refer to Lesson)
Personal notes (refer to Notes)

PLATO
PLATO author language commands 4-103
PLATO characters (refer to Character)
PLATO charset keys (refer to Character)
PLATO charsets (refer to Character)
PLATO communications display 4-27 (also refer to Communications)
PLATO courses 2-23; 3-23 (also refer to Lesson)
PLATO editing keys (refer to Edit)
PLATO facilities display 3-1
PLATO group (refer to Group)
PLATO lesson definition 1-1 (also refer to Lessons)
PLATO lesson delivery options 1-2
PLATO lesson editor (refer to Edit)
PLATO lesson publication (refer to Lessons)
PLATO router (refer to Router)
PLATO user list 4-54

PLATOSCRIBE (refer to Router)

PLM
PLATO learning management 2-6; 3-26,34
PLM aids 3-3
PLM curriculum 5-2
PLM group 5-2
PLM module 5-2

Prints
Central prints 4-59
Controlling access 5-4,25 (also refer to Access)
Description 4-6
Local prints 4-59
Print requests 2-20; 3-3,41; 4-59 (also refer to Security)
Screen Prints 4-59

Publication of PLATO lessons (refer to Lessons)

Published Courseware
Author index 4-50 (also refer to Author)
Catalog 2-20; 4-6,46 (also refer to F catalog)
Course information 4-28
Directory of PLATO authors 4-52 (also refer to Author)
File name index 4-51 (also refer to File)

Index 4-28
Notes 4-28 (also refer to Notes)
Subject index 4-51 (also refer to Published courseware)
Title Index 4-28 (also refer to Published courseware)

Q-ref (refer to AIDS)
Quick reference, AIDS (refer to AIDS)

Receiving help (refer to Help)
Register

Registering author information 4-63
Registering lesson information 4-63
Registering students 3-16 (also refer to Sign on)
Registering users in account 5-9
Registering users on Microcomputers (refer to Microcomputer)
User registration 1-15,16; 5-36

Report generator options (refer to Account options)

Requesting help (refer to Help)

Review all file options (refer to Account)

Routers

Add a student 3-53 (also refer to Register)
Delete a student 3-53
Flexible disk routers 4-126 (also refer to Disk)
Micro PLATO Router 2-20; 4-127 (also refer to Micro PLATO Language)
"mprouter" (refer to Micro PLATO router)
"mprouter" disk preparation (refer to Disk)
"mrouter" (refer to PLATO router)
PLATO router 3-26,43; 4-127
PLATOSCRIBE 3-18; 4-131
Router lessons 3-26 (also refer to Lessons)
Router with published curricula 3-29
Router with your own curricula 3-29
Security options (refer to Security)
"s\scribe" (refer to PLATOSCRIBE)
Using a custom router 3-34; 4-132
Writing routers 4-116

Screen prints (refer to Prints)

Security

Account security 5-6,12 (also refer to Account)
Backups 5-41
Changing your password 1-26
Damaged file inspection 5-41
Default setting 5-12

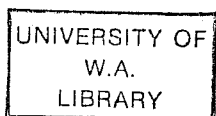
- Group security 3-12; 5-6
- Intersystem file security 5-38 (also refer to File)
- Micro PLATO language security 4-135
- No code 5-6
- Protecting PLATO files 5-41
- Router security options 3-52
- Security codewords in lessons 4-65,122
- Security, Micro PLATO language (refer to Micro PLATO language)
- System access to account (refer to Access)
- System access to groups (refer to Access)
- Typed code 5-6
- Unmatchable group code 3-12
- Sequence module 3-32
- Sequence with review module 3-32
- Sign off 1-26
- Sign on
 - Automatic sign on 4-119
 - Lesson sign on 1-16
 - Starting a PLATO lesson 1-16
- Student
 - Introduction 1-2
 - Student data summary (refer to Lessons)
 - Student features introduction 2-1
 - Student notes (refer to Notes)
 - Student records (refer to Lessons)
 - Student roster (refer to Lessons)
- Subject index, courseware (refer to Published courseware)

- Talking (refer to Term-talk)
- Teleconference (refer to TERM-confer)
- Templating records 3-37
- TERM
 - TERM-ask 2-10; 3-41; 4-18
 - TERM-busy 4-23
 - TERM-calc 2-19
 - TERM-comment 2-15; 4-25
 - TERM-confer 4-24
 - TERM-consult 3-41; 4-16
 - TERM-cursor 4-120
 - TERM-grid 4-120
 - TERM-pnote 3-41; 4-119
 - TERM-reject 4-24
 - TERM-spell 4-55
 - TERM-step 4-120
 - TERM-talk 3-41; 4-21
 - TERM-time 2-19; 4-55
- Terminals
 - CDC 110 with IST-III 1-10,12 (also refer to Microcomputers)
 - CDC 110 with Viking 1-10,12 (also refer to Microcomputers)
 - Control Data types 1-4
 - Controls 1-6
 - IST type 1-4
 - Keyboards (refer to Keyboard)
 - Microcomputers (refer to Microcomputers)
 - Viking 721-30 1-4
- Text block (refer to Block)
- Time saving features 4-55 (also refer to TERM)
- Title index (refer to Published courseware index)
- Transmit PLATO files to NOS (refer to Account options)

- Updating account access list (refer to Access)
- Usage statistics (refer to User)
- User
 - Access (refer to Access)
 - Categories 1-2
 - Flag settings 4-55
 - Instructor 1-2; 3-1
 - List 4-6,54
 - Orienting 1-27
 - Student 1-2; 2-1
 - User registration (refer to Register)
 - Usage statistics 4-55

- Vocabulary block (refer to Block)

- Writing notes (refer to Notes)
- Writing PLATO lessons (refer to Lessons)
- Writing routers (refer to Routers)



COMMENT SHEET

MANUAL TITLE: CDC PLATO User's Guide

PUBLICATION NO.: 97405900

REVISION: D

NAME: _____

COMPANY: _____

STREET ADDRESS: _____

CITY: _____ STATE: _____ ZIP CODE: _____

This form is not intended to be used as an order blank. Control Data Corporation welcomes your evaluation of this manual. Please indicate any errors, suggested additions or deletions, or general comments below (please include page number references).

Please Reply

No Reply Necessary

AA3419 REV. 4/79 PRINTED IN U.S.A. CUT ALONG LINE

NO POSTAGE STAMP NECESSARY IF MAILED IN U.S.A.

COMMENT SHEET

MAILING INFO - CONTROL DATA CORPORATION

STREET ADDRESS

CITY AND ZIP

STATE

CITY AND ZIP

CITY AND ZIP

CITY AND ZIP

STATE

CITY AND ZIP

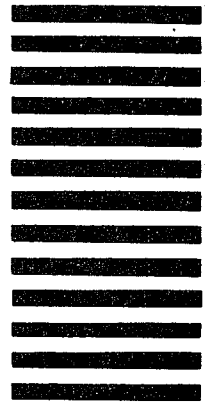
POSTAGE WILL BE PAID BY ADDRESSEE OR BY MAILING OFFICE AT ADDRESSEE'S OPTION. POSTAGE WILL BE PAID BY ADDRESSEE OR BY MAILING OFFICE AT ADDRESSEE'S OPTION.

FOLD



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 8241 MINNEAPOLIS, MINN.



POSTAGE WILL BE PAID BY
CONTROL DATA CORPORATION

PLATO Software Development
MEVO3P
511 11th Ave South
Minneapolis MN 55415

CUT ALONG LINE

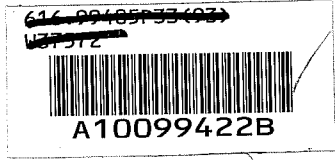
FOLD



180885
CONTROL DATA
P.O. BOX 0
MINNEAPOLIS, MINNESOTA 55440

SALES OFFICES AND SERVICE CENTERS
IN MAJOR CITIES
THROUGHOUT THE WORLD

(270443)



253031

Q371.39445

1983

PLA



RESEARCH DIVISION
PLA
RESEARCH DIVISION
RESEARCH DIVISION