TABLE OF CONTENTS

1. Introduction 1-1

Using This Manual 1-1
Sketch Terminology 1-2
Stylistic Conventions 1-3
Word Usage 1-3
Command and Menu Names 1-4
Key and Keynames 1-4

2. Getting Started 2-1

Loading Sketch 2-1
From a Fileserver 2-1
From Floppies 2-1
Dependencies 2-2
Using Sketch 2-2
Opening a Sketch Window 2-2
Using the Sketch Command Menu 2-2
Accessing Submenus 2-4
Pop-Up Menus 2-4
Selecting Elements 2-5
Ending a Sketch Session 2-6
Saving a Sketch 2-6
Closing a Sketch Window 2-7

3. Using the Sketch Command Menu 3-1

Introduction 3-1
Delete 3-1
Move 3-3
Copy 3-5
Align 3-11
Change 3-17
TEXT BOX 3-19
3-23
3-29
3-29
3-31
3-31
3-33

3-35

3-37

Bit Image 3-39

Bury 3-41

Group 3-43

Ungroup 3-45

Undo 3-47

Defaults 3-49

Grid 3-55

Move view 3-57

Hardcopy 3-61

Put 3-63

Get 3-65

4. Manipulating the Sketch 4-1

Displaying Parts of a Sketch 4-1

Using the Sketch Display 4-1

Scrolling a Window 4-3

Moving the Region Viewed 4-4

Expanding or Shrinking an Image 4-5

Opening a Second Window onto a Sketch 4-5

Opening a Page-Sized Sketch Window 4-5

Cleaning Up the Display 4-5

Finding Your Way Around in a Sketch 4-6

Finding Your Way Home 4-6

Getting an Overview of the Sketch 4-6

Restoring a View on the Sketch 4-6

Returning to a View on the Sketch 4-7

Forgetting a View 4-7

Opening a Coordinate Display Window 4-7

5. Using Sketch With TEdit 5-1

Putting Sketches into Documents 5-1

Using SHIFT-Selection 5-1

Using the COPY Key 5-1

Using SHIFT-Snap 5-2

Formatting Sketches in Documents 5-2

Changing the Size of a Sketch 5-2

Centering a Sketch 5-2

Paginating Sketches 5-3

6. Using Bitmaps with Sketch 6-1

Using Bitmaps in Sketches 6-1

Freezing Pup-up Menus 6-2

Editing a Bitmap 6-3

Putting a Border Around a Bitmap 6-5

7. Programmer's Interface to Sketch 7-1

Introduction to the Programmer's Interface 7-1

Creating Sketch Elements 7-1

Manipulating Sketch Elements 7-5

Sketch Viewers 7-6

Monitoring Sketch Viewers 7-8

Line or Brush Properties 7-11

Changing Elements Like the Change Command Does 7-12

Clearing Out the Interactive Editing Change 7-12

Moving and Copying Sketch Elements 7-13

Writing Move Functions 7-13

Examples of Constraining Moves 7-15

Prompting the User for Element Positions 7-15

Letting the User Select a Collection of Elements 7-16

Sketch Element Properties 7-16

Control properties 7-17

Graphic properties 7-17

Text properties 7-17

Angle properties 7-17

BitMap properties 7-17

Specifications of data structures for Sketch properties 7-19

Sketch Utilities 7-20

Saving a Sketch on a File 7-20

Changing the Sketch Command Menu 7-20

Making an Image Object from a Sketch 7-20

Sketch Streams 7-20

Glossary GLOSSARY-1

Index INDEX-1

LIST OF FIGURES

1-1.	A simple sketch	1-1
2-1.	The background menu	2-1
2-2.	An empty Sketch window	2-3
2-3.	The Sketch option and its submenu	2-3
2-4.	The Lisp prompt window	2-4
2-5.	Accessing sub-submenus in Sketch	2-5
2-6.	The Aspect menu for changing a Sketch box element	2-5
2-7.	Sketch elements with control points displayed	2-6
3-1.	Result of the **Move elements** subcommand	3-6
3-2.	Result of using the **Move Point** subcommand	3-6
3-3.	Result of using the **Move points** subcommand	3-7
3-4.	Copying an element with a two-point transformation	3-12
3-5.	Copying an element with a three-point transformation	3-13
3-6.	Selecting the **Copy w/2pt trans** subcommand	3-13
3-7.	Scaling with a two-point transformation	3-14
3-8.	Rotating with a two-point transformation	3-15
3-9.	Stretching with a three-point transformation	3-15
3-10.	Reflecting with a three-point transformation using the **Copy** command	3-16
3-11.	A three-point transformation using the **Copy** command	3-16
3-12.	The effect of using **Align**	3-17
3-13.	Control points aligned with the **Space evenly in X** subcommand	3-18
3-14.	Effect of using the **Space evenly in X** subcommand followed by the **Space evenly in Y** subcommand	3-18
3-15.	The pop-up menu for changing text	3-19
3-16.	The pop-up menu for changing a text box	3-20
3-17.	The pop-up menu for changing a text box's thickness	3-20
3-18.	The number pad menu for entering line thickness	3-20
3-19.	The menu that allows you to change the filling mode	3-21
3-20.	The menu of available filling modes	3-21
3-21.	Some examples of fillings over a filled box	3-21
3-22.	Some examples of text boxes	3-23
3-23.	A Text box and a box	3-27
3-24.	Example of polygon with the control points highlighted	3-30
3-25.	Some examples of curves	3-31
3-26.	Some examples of closed curves	3-32
3-27.	The control points of an arc	3-33
3-28.	The aspect menu for changing an arc	3-34

3-29.	The control points for an ellipse	3-35
3-30.	Two examples of circles with the control points displayed	3-37
3-31.	A sketch and a bitmap with control points displayed	3-39
3-32.	The pop-up menu for changing a sketch converted to a bit image	3-39
3-33.	An example of an enlarged (zoomed) bit image	3-40
3-34.	The **Bury** command and its submenu of commands	3-41
3-35.	The result of **Bury** applied to text box number 3	3-41
3-36.	The result of the **Bring to top** subcommand applied to text box number 1	3-42
3-37.	The result of the **Reverse order** subcommand applied to four text boxes but not the line	3-42
3-38.	How grouping affects a collection of Sketch elements	3-43
3-39.	A sample list of Sketch events to undo	3-47
3-40.	A sample pop-up menu that appears when you select **Undo?**	3-48
3-41.	The menu for the **Text** subcommand	3-50
3-42.	The **Defaults** command's **Text Box** options	3-50
3-43.	Changing the direction of arcs	3-51
3-44.	The options for new arrowheads	3-52
4-1.	A sketch and its coordinate system	4-1
4-2.	A sketch and its home view	4-2
4-3.	A scrolled view	4-2
4-4.	A zoomed view	4-3
4-5.	Zooming in with the **Move view** command	4-4
4-6.	Zooming out with the **Move view** command	4-5
6-1.	The menu for editing bitmaps	6-3
6-2.	The pop-up menu for the bitmap editor window	6-4
6-3.	A sample bitmap editor window	6-4