easy·draw 2

SOFTWARE

Exclusive UK Publishers of

easy·draw 2

*The Professional
Drawing Program
for the Atari ST*

® **easy·draw 2**

My special thanks to all the dedicated and extremely talented people who have worked long and unusual hours during the past two years to make this product a reality. Also, thanks to the thousands of registered owners who have sent us comments, suggestions, and printouts of how they are using Easy-Draw for their needs.

I know you'll enjoy using Easy-Draw as much as we did creating it for you. Please register your product now in order to stay appraised of future Easy-Draw enhancements and other powerful Migraph products for your Atari ST.

Kevin C. Mitchell
President, Migraph, Inc.

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Contents

Welcome

Migraph Inc. is pleased to present you with Easy-Draw[R], the object-oriented drawing program that makes it easy for anyone to create professional-looking line drawings, technical illustrations, and reports with a personal computer.

Easy-Draw is fast, flexible, and just plain fun to use. With it you can create complex illustrations, floor plans, landscape designs, etc. By using both the text and graphics features, you have a simple desktop publishing system that can be used to create newsletters, brochures, presentation aides, forms, ads, flyers, and much more. We know that as you grow familiar with Easy-Draw, you'll discover many more uses.

What's in This Book

This book is divided into four major parts: an introductory section shows you the basics of drawing with Easy-Draw; a section describing advanced techniques; a section of examples that will provide you with some ideas of ways to use Easy-Draw; and a summary section to answer your questions about Easy-Draw features and commands. This book is not meant to be read cover-to-cover, but to be picked up as a need for it arises. You'll have much more fun exploring the product on your own once you've become familiar with the basic techniques, which are described in the first section.

For	Look in
Introduction to the basic techniques	First section: First Drawings
Advanced techniques	Second section: Master Drawings
Examples and more practice	Third section: Sample Drawings
Reference and answers to your questions	Fourth section: Summaries

Overview of Easy-Draw

Easy-Draw presents a drawing surface very much like a drafting
table with quadrant (or graph) paper attached to it. The squares
of the quadrant paper line up with markings on horizontal and
vertical rulers. For this basic work surface, Easy-Draw provides
drawing tools for the geometric shapes: squares, rectangles, cir-
cles, wedges, ellipses, arcs, straight lines, and free hand lines.
Easy-Draw also has a lettering tool, called text, for adding titles,
labels, notes, and legends to drawings.

You can use Easy-Draw to create a large variety of drawings be-
cause the basic shapes can become your tools to form the parts of
a complex drawing. Each tool draws an object, such as a square
or circle. By combining the objects, you can build up a drawing
that depicts just about anything: a floor plan, an organization
chart, a company logo, even a business form.

What's the Difference?

How does Easy-Draw differ from a paint program? The major
difference is structure. As a result of structure, each object is an
entity unto itself. In painting programs, each thing you paint
obliterates everything else it covers, the way wall paint sticks to
the previous layer of paint, dirt, and graffiti. In Easy-Draw, each
object has its own layer. It's as if a drawing were a composite of
multiple sheets of plastic, each with a single object on it. So even
though one object covers another, it only blocks rather than oblit-
erates. In addition, objects can be made transparent so that the
"hidden" objects show through. Because each object stands alone
as a whole piece, you cannot erase part of an object as you might
in a painting program.

While some painting programs offer a grid as an option, the grid
is an important part of the structure of a drawing program. The
grid provides precise positioning, precise alignment, and measur-
able sizes and spacing. Moreover, because the grid is a central
part of the structure, its markings can be adjusted as needed for
finer or coarser measurements. The grid provides the basis for
magnifying parts of a drawing to any level, not just one or two
preset levels such as bits or whole page.

What's the Process?

The process of creating a complete drawing involves the repeated drawing of objects that you combine to form a whole picture. The Easy-Draw drawing process involves the following steps:

* Choose a drawing tool from the Pop-Up menu.

  The Pop-Up menu appears wherever the mouse pointer is located so that you don't have to fetch a drawing tool. The right mouse button brings up the Pop-Up menu.
* Draw the object using the left mouse button.
* Position the object by moving the mouse with both mouse buttons up.
* If necessary before pasting down the object, adjust the size and direction using the left mouse button again.
* Paste down the object with the right mouse button.

After drawing an object, you can add or change color, pattern, or line width and style to suit your purposes. For text, you can choose color, appearance, size, and style (font).

Once the process is complete, you can save the drawing permanently on disk for later use, for printing, or for revisions. Easy-Draw has commands for revising (editing) drawings, for arranging the objects within a drawing, and for changing the magnification of the drawing (zooming) so you can see selected portions in detail.

To further support your real life tasks, Easy-Draw also gives you several choices for the size of paper and the direction your drawing will be printed on it (up-and-down or lengthwise).

Some Terms

The following terms and their definitions will help you identify the various items and techniques within Easy-Draw.

Choose	To indicate a menu, command, choice in a dialog box, or a drawing tool you want to use by moving the mouse pointer onto your choice then clicking the left mouse button.
Click	Press and release a mouse button.
Drawing	A collection of objects arranged to form a picture of something.

Drawing Tools   The drawing tools are the basic shapes on the
                 Pop-Up menu, which appears at the position
                 of the mouse pointer when you click the right
                 mouse button. Move the mouse to highlight
                 the tool you want to use, then click the left
                 mouse button. The Pop-Up menu will be re-
                 placed by the cross hair pointer, used for
                 drawing.

                 The following table shows the Pop-Up menu
                 and summarizes what happens when you use
                 the drawing tools.

Shape	Tool Name and Summary
	Box: a rubber band box grows in the direction you move the mouse.
	Rounded Box: drawn the same as Box.
	Circle: small cross marks center; circle grows outward evenly from center.
	Ellipse: small cross marks center; ellipse stretches outward lopsidedly from center.
	Circular Wedge: small cross marks center; 90 degree wedge grows outward evenly from center; arrow keys adjust angle for wedges more than or less than 90 degrees.
	Elliptical Wedge: small cross marks center; wedge stretches outward lopsidedly from center; arrow keys adjust angle for wedges more than or less than 90 degrees.
	Circular arc: drawn the same as circular wedge.
	Elliptical arc: drawn the same as elliptical wedge.
	Straight line: line grows in direction you move mouse; can swing line around 360 degrees while growing.
	Polyline: drawn the same as straight line, but you can draw multiple straight lines with each click of right mouse button.
	Free hand sketching: continuous, curving line grows in directions you move the mouse.

Text: text box drawn same as box; click right mouse button; type text; click right mouse button

The advantage of the Pop-Up menu is that it is always conveniently placed where you are working. You do not have to move across the drawing surface to the edge or to a drop down menu just to change tools. You save time and effort and do not have to break your concentration on your work to perform this simple mechanical step.

Object

Anything you draw as one piece of a drawing. Squares and circles are obvious objects. Lines, polylines, arcs, and even text are also objects. Any part of a drawing which, when selected, has an object box around it.

Object Box

A box that appears around objects when they are selected. The object box has either 4 or 8 sizing markers on it. The primary purpose of the object box is to change the size or shape of the object inside it.

Mouse Buttons

The Atari ST mouse has two buttons. Only the left mouse button is used on the GEM desktop, but in Easy-Draw, you will use both buttons. The following table may help you remember the basic distinction between the uses of the two buttons:

Left button	Right button
Draw objects	Bring up Pop-Up menu
Size objects	Paste down new object
Select objects	Escape from Pop-Up menu
Move existing selected object	Escape from drawing new object when pressed with left button down, then both released together
Choose commands	Escape from drawing to selecting (double click)
Choose dialog box choices	

While creating an object, moving the mouse with both buttons up moves the object.

Pointer   The indicator on the screen that shows where
                           you are on the drawing. Easy-Draw has the
                           following pointer shapes:

         +   Cross hair (drawing) pointer

                           Finger (selection) pointer

                           Open Hand (move) pointer

                           Arrow (choice) pointer for menus, com-
                           mands, dialog boxes, and drawing tools

Polyline   A drawing tool for drawing any number of
                           connected straight lines. These may form a
                           completed, closed object or may simply be a
                           group of connected straight lines that form an
                           open object; for example, a zig-zag line.

Rubber Band Box   A box that appears on the drawing surface
                           when you select an area or when you are
                           changing the size of an object.

Select   To indicate an object or area of the drawing
                           surface that you want to work on. Selected
                           objects show their object boxes.

Sizing Marker   The little squares on an object box you point
                           to with the mouse and move to change the
                           size of an object.

How's My Memory?

Because a drawing can have multiple layers of objects, a drawing
can require more memory and disk space than a painting, which
has a fixed maximum size. While you can create a very complex
drawing with 500-600 objects, you should be aware of the limits
and requirements of memory Easy-Draw (and any drawing pro-
gram) has. Easy-Draw limits are based on the amount of memory
your computer has. The following table shows the approximate
limits and requirements.

Amount of memory	Approx Number of objects
520ST (512K)	4000
1040ST (1M)	12000

Setting Up Your Easy-Draw Master Disk

You must have your Easy-Draw Master disk in drive A when you turn on your Atari^R ST. For maximum use of your computer's memory for Easy-Draw, you should limit the number of desktop accessories in memory.

Important: You can use desk accessories with Easy-Draw , but be aware that each desk accessory takes up memory that can be used for drawings. If you have very large amount of memory taken by one or more desk accessories, Easy-Draw may not load into 512K. We recommend that you load only the desk accessories that you absolutely need.

Copies of Easy-Draw and Disk Drives

You can make one copy of Easy-Draw on a floppy disk or hard disk, as stated in the license agreement. See Chapter 6, "Managing Disks, Files, and Folders," in your *Atari 520ST Computer Owner's Manual* for directions for copying floppy disks.

Hard disk owners who would like to install Easy-Draw and all its support files on their hard rive should refer to Appendix A.

Storing Drawings

You are advised against saving your drawings on your original Easy-Draw Drawing disk. Instead, save your drawings on a copy of the Easy-Draw Drawing disk. For those of you who need information concerning creating new drawing disks, please see Appendix B.

Printer Requirements

The printer you use with Easy-Draw must be compatible with Epson FX^{TM} **graphics** printers.

Note: Other output devices will be supported with optional software drivers from Migraph. An example at the time of this printing is HP LaserJet Plus laser printer.

For information regarding current drivers available, please call Migraph at 206-838-4677.

First Drawings

This section contains a short walk-through lesson to make you familiar with the basic techniques for using Easy-Draw. When you're done, you should know enough about Easy-Draw to explore the program freely and easily.

This section covers the following topics:

* Starting Easy-Draw
* How to draw objects and move them
* How to fill in objects with a pattern, change the color, and change the line width
* How to select objects and change their size
* How to place text in a drawing
* How to store a drawing to save it for later use
* How to print a drawing
* How to quit Easy-Draw

Starting Easy-Draw

To start Easy-Draw from a floppy disk, follow these directions:

[1] Insert the Easy-Draw Master Disk in drive A.

[2] Turn on your Atari ST.

[3] When a window appears with a list of the files on your Easy-Draw disk, move the mouse until the arrow rests on the name EASYDRAW.PRG.

This is called pointing.

[4] Double click (press and release very rapidly twice in succession) the left mouse button.

Easy-Draw will start, and you will see the following screen:

Desk File Page Zoom Edit Arrange Text Line Pattern Color

```
                        STARTUP.GEM

              Title Bar        Drawing Title        Full Box
                                                    Scroll Arrow

CLIPBOARD
              Clipboard                             Slider

TRASH
              Trashcan
                                Pointer Curser

                                                    Scroll Bar

        Scroll Arrow           Slider               Window Size Box
```
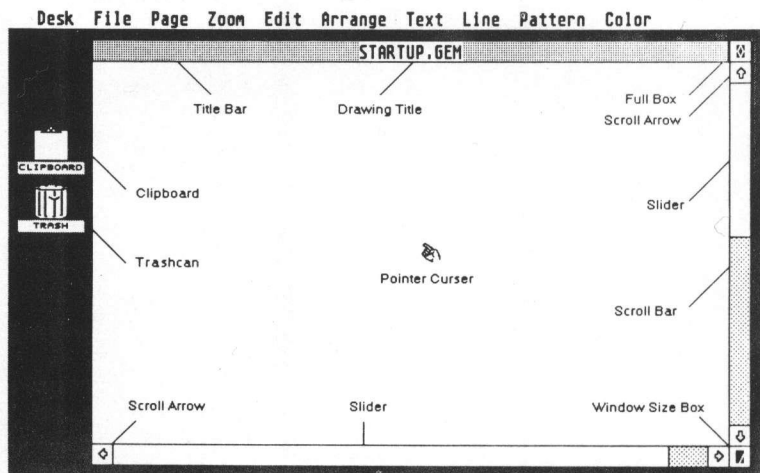
Look Around First

An easy way to become quickly familiar with any program at the
beginning is to look at all the menus. If you like, try this now.
Move the mouse pointer (the finger on the screen) onto each
menu name in turn (the pointer becomes an arrow). Pause at
each name to let the menu drop down. Look at the names on the
menu; these names are the Easy-Draw commands, which you will
use to adjust your objects and drawings. All the commands are
explained in the chapter "Menu Commands" for later reference.

You'll see that some of the commands are gray and some are
black. Black commands are available for use; gray commands are
not available right now because they are not applicable. Gray
commands require some preliminary action before they are
useful.

Some menus also contain gray names in the middle of gray lines. These names are dividers that separate commands on a menu into groups. For example, on the Page menu, ---Grid--- applies to the three commands below it: (Grid) SPACING..., (Grid) DISPLAY ON, and (Grid) SNAP ON.

When you've seen all the menus and are ready to learn to use Easy-Draw, move the mouse pointer onto the drawing surface and click the left mouse button. This is how you cancel a menu. Now, go to the next section.

Drawing a Box

To draw any object, you will first bring up the Pop-Up menu, you'll choose a drawing tool, then you'll draw the object.

To draw a box, following these directions:

[1]   Anywhere on the drawing surface, click (press and release) the right mouse button to bring up the Pop-Up menu, which looks like this:
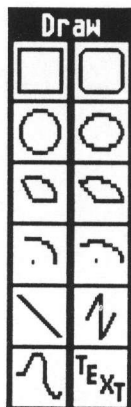
Question: What if I change my mind after I've brought up the Pop-Up menu? Then, click the right mouse button again to make the Pop-Up menu disappear. If you want to, try it now. Then, press the right button to bring up the Pop-Up menu again.

[2] Point to the box in the upper left corner of the menu, then click the left mouse button.

This step chooses the drawing tool you will use. The mouse pointer becomes a hollow cross, called the cross hair pointer. When you see the cross hair pointer, Easy-Draw is ready to draw objects.

[3] Point to the place on the drawing surface where you want to start the box.

[4] Hold down the left mouse button and move the mouse to draw the box to the size you want it.

[5] When the box is the size you want it, release the left button.

Moving the Box

Question: Did you jiggle the mouse after you finished drawing the box? Did the box move?

When you've finished drawing an object, it is not yet pasted down on the drawing surface. If the box is not the size or shape you want it, hold down the left mouse button again and move the mouse to adjust the size and shape. Until you paste it down, you can move the box anywhere on the drawing surface by moving the mouse with no buttons pressed.

* To move the box, move the mouse. Try it. Put the box where you want it.

Note that this method of moving the object only works before you paste it down. Later you'll learn how to move an object that has been pasted down.

* To paste down the box, or any other object after you've drawn it, click (press and release) the right mouse button. Do this now.

The box appears with an extra box around it that has little squares attached to it, which means the object is selected. To change an object, it must be selected. The extra box is called the object box; the little squares are called sizing markers. You'll learn more about these a little later.

Filling the Box with a Pattern

To fill an object with a pattern, you will choose Styles from the
Pattern menu, then choose a pattern from the dialog box.

To fill the box with a pattern, follow these directions:

[1] Point to the Pattern menu.

The menu drops down and shows four commands: STYLES,
TRANSPARENT, SHADOW, and USER PATTERN.

[2] Point to STYLES and click the left button.

This is called choosing a command. When you choose the
PATTERN STYLES command, a dialog box appears that looks
like this:
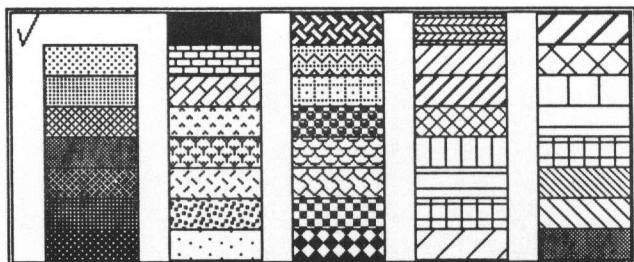
[3] Point to the pattern you'd like to fill the box with (choose
any pattern), then click the left mouse button.

Easy-Draw will fill the box with the pattern you chose.

Changing the Pattern

After seeing a pattern on the screen (or printed out, perhaps),
you may decide that you'd like to use a different pattern.

To change the pattern in the box, follow these directions:

[1] Choose STYLES from the Pattern menu by pointing first to
Pattern, then to STYLES, then clicking the left mouse button.

[2] Choose the new pattern by pointing to the one you want,
then clicking the left mouse button to give the box the new
pattern.

Changing the Color

Easy-Draw and your Atari ST can display your objects in four
colors. To choose a color, you will choose the Color menu, then
choose the color you want.

To choose a color, follow these directions:

[1]   Point to the Color menu.

      The Color menu appears, with a checkmark beside the cur-
      rent color.

[2]   Point to the color you want, then click the left mouse button.

      Easy-Draw changes the selected object and the pattern to
      the new color.

      See the chapter entitled "Setting Colors" when you want to
      learn more about color control in Easy-Draw.

Changing the Width of the Line

If you decide that the line of the box is too narrow (or too fat if
you drew a fat line), you can change the width of the line by using
the Line menu.

To change the width of a line, follow these directions:

[1]   Point to the Line menu.

      The Line menu appears with checkmarks beside the current
      choices for line width and style, and for line end styles
      (arrowheads) for open lines.

[2]   Choose the line width or style you want by pointing to the
      example in the menu.

[3]   Click the left mouse button to change the line width to the
      new width.

Note: When you change the line width or style, Easy-Draw also
uses your choice for the lines of all the objects, except text, that
you draw subsequently.

Drawing Another Box

If you want to add another box to your drawing, you can do so by simply holding down the left mouse button and drawing it. You don't have to choose the drawing tool again as long as you are drawing the same kind of object.

To draw another box, follow these directions:

[1] Point anywhere on the drawing surface.

[2] Hold down the left mouse button.

[3] Draw a box, then release the left mouse button.

[4] Move the box where you want it with both mouse buttons up.

[5] Click the right mouse button to paste down the new box.

The new box becomes the selected object; it has an object box around it. The new box has the pattern, color, and line width you last chose.

You can work on this box to change the pattern, color, and line width, just as you did for the first box.

This technique for drawing another box works for all the objects you draw. As long as the pointer is a cross hair, you can continue to draw the type of object you last chose from the Pop-Up menu.

Changing the Size of the Box

Once you've drawn and pasted down an object, you may decide that it's not the right size for your needs. Easy-Draw provides tools for easily changing the size of an object.

Before you can work on an object, it must have an object box around it. An object box is a box around the object with little squares on it. When an object has an object box around it, it is selected, which means whatever you do next will affect that object, but nothing else at the moment.

To change the size of the first box you drew, follow these
directions:

[1]   Change to Point Mode instead of draw mode.

      Switch from drawing (cross hair pointer) to selecting (finger
      pointer) by clicking the left mouse button while the pointer
      is over the desktop.

      (There are several other ways to select point mode, which
      are described in the "Hints" section of this manual.)

[2]   Select the first box you drew.

      When you see the finger pointer, point inside the first box
      and click the left mouse button.

[3]   Decide how you'd like to change the size of the box, then
      choose the appropriate sizing marker and move it.

      To choose a sizing marker, place the tip of the finger directly
      in the middle of the sizing marker. To change the size of the
      box, hold down the left mouse button, then move the mouse,
      either to expand or shrink the box.

      Feel free to try all the ways that you can change the size of
      the box. Trying all the ways will give you a good feel for how
      much control you have in Easy-Draw.
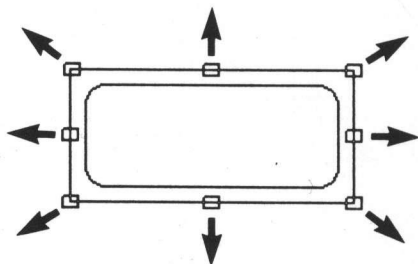
Writing Text

Placing text is similar to placing an object or line on a drawing.
Text is one of the choices on the Pop-Up menu.

To write a title, follow these directions:

[1]   Bring up the Pop-Up menu by clicking the right mouse
      button.

[2]   Choose Text from the Pop-Up menu by pointing to the Text
      drawing tool then clicking the left mouse button.

[3]   Point to the spot where you want the text to begin.

[4]   Hold down the left button and draw a box, which will hold
      the text.

[5]   Release the left button when the box is the size you want.

      Remember to make the box large enough to hold all your
      text. You can change its size later at any time, but this will
      help you while you are typing in the text.

[6]   If necessary, move the text box where you want it by simply
      moving the mouse while both mouse buttons are up.

[7]   Click the right button to paste down the text box.

      When you paste the text box down, the pointer becomes a
      vertical line positioned in the upper left corner of the text
      box. The text box has a white background temporarily, and
      sizing markers to change the size of the text box while you
      are creating the title.

[8]   Type a title, such as:

      *This is an example of
      justified text which fills the
      inside of the text box.*

      Be sure to press Return key at the end.

      Notice that the text wraps around at the end of the line. Use
      the arrow keys on the keyboard to move the vertical line for
      editing the title. Use the Backspace key to erase to the left;
      use the Delete key to erase to the right. You can also press
      the Return key in the text box to start a new paragraph. See
      the description of the Edit Text command in the chapter en-
      titled "Menu Commands" for further details of editing text.

[9]   When you have finished typing the text, click the right mouse
      button to paste down the text itself.

      The text box will now have a transparent background. For an
      illustration of this, see the figure for "Inserting Text" in the
      chapter entitled "Techniques."

Changing the Size of the Letters

Easy-Draw lets you choose how large you want the letters to be. You can also choose the appearance of the letters: bold, light, italic, outlined, or underlined. To change the size or appearance of text, you will choose settings on the Text menu.

To change the size of the letters in the title, follow these directions:

[1]   Point to the Text menu.

[2]   Point to the size you want under the --Height-- label, then click the left button to change the size of the text.

Question: What do the numbers mean? The numbers in the dropdown represent point sizes for letters. Perhaps the easiest way to deal with point sizes is to choose a size and look at the result. Your eye is the best judge of the appropriate point size. Refer to the description of the Height command in the chapter entitled "Menu Commands" for more details about point sizes.

Question: When I chose a larger point size, some of my text disappeared. What happened to it? Easy-Draw shows as much text as will fit in the text box, which is why you should be sure the text box is large enough when you create it. When you increase the point size, all the text may not fit in the box. Easy-Draw clips off the excess, but the text is not lost. If the text does not fit in the text box, you have a choice: either reduce the point size or expand the text box.

*   To expand the text box, use the same steps you used earlier to change the size of the box you drew. The text box can be horizontally or vertically oriented.

*   To change the point size, choose a new point size from the Text menu.

*   Probably the most used text option is Justify. This option right justifies your text so it expands to fill the width of your text box instead of a ragged side. (Remember to press Return at the end of multiple line text labels, or the last line expands to the right.)

If you want to experiment with the appearance of the characters, you can choose one or more of the appearance settings in the top part of the Text menu.

Saving the Drawing

If you want, you can store your drawings for use or reference later on. You can store partially completed drawings, then come back later to work on them some more. Also, before you can print, you need to store your drawing.

Note: Single disk drive owners must place their drawing disk in drive A before saving drawings. Dual drive owners should already have their drawing disk in drive B.

To save a drawing, follow these directions:

[1] Choose SAVE AS from the File menu.

The File Selector box appears.

[2] Type a name for your drawing, such as:

Boxes

Easy-Draw uses this name to identify the drawing for you so that you get it back later. The name can have up to eight letters and numbers in any order.

[3] Point to the box with OK inside it, then click the left mouse button.

Easy-Draw saves your drawing on the disk in a file named *BOXES.GEM*.

Note: If you have saved a drawing at least once before, you can choose File Save (or press F1 key) to quickly save your changes to a drawing without having to type the name again.

Note: The default drive to save your drawing for each window is the drive that Easy-Draw was started from. To change the disk drive, edit the line under "Directory" in the File Selector box. For example, to save to drive B, Backspace over *A:*.GEM*, type *B:*.GEM*, move the mouse pointer to the list of names, and click the left mouse button.

Printing the Drawing

If you want to print your drawing, be sure your printer is ready:
turned on and online, paper inserted and aligned, ribbon ready.
Also, remember to have your drawing disk inserted first, as de-
scribed under "Saving the Drawing."

To print a drawing, follow these directions:

[1]   Choose OUTPUT from the File menu.

[2]   Choose ADD NAME from the Edit menu.

[3]   Point to the name of your drawing in the File Selector box,
      then click the left mouse button.

[4]   Choose START OUTPUT from the File menu.

[5]   Point to PRINTER in the dialog box, then click the left
      mouse button.

[6]   Point to OK, then click the left mouse button to start
      printing.

      Important: If you have only one disk drive, you must insert
      you Easy-Draw Master Disk now, before quitting from
      Output.

[7]   When printing is finished, choose QUIT from the File menu
      to quit printing and to return to Easy-Draw.

Note: The printer output capability of Easy-Draw produces pic-
tures at a much higher resolution than shown on the screen.
However, this output process does take a few minutes to print.
For a quick copy of your drawing (at any time), there is an alter-
nate method to follow. With your printer ready, you can do a
screen hard-copy by pressing the Alternate and Help keys at the
same time. This will automatically give you a quick print of the
entire screen. You can also toggle the screen hard-copy off by
pressing the same keys again.

Quitting Easy-Draw

When you are done working on drawings and want to shut off Easy-Draw, you will choose Quit from the File menu.

To quit Easy-Draw, follow these directions:

[1]   Choose QUIT from the File menu.

If you choose Quit but have not yet saved your drawing (either a new drawing or an existing drawing you have changed), Easy-Draw displays a dialog box that asks you if you want to save the changes you've made.

[2]   When a dialog box appears, click the answer that suits you.

Easy-Draw will obey your wishes, then quit. You'll see the GEM desktop again. Only at this point is it safe to remove your Easy-Draw disk from the disk drive.

Summary of First Drawings

The following list will remind you of the directions and techniques
you practiced in this section of this book.

* How to start Easy-Draw by double clicking on the name
  EASYDRAW.PRG.

* How to draw an object by bringing up the Pop-Up menu with
  the right mouse button, choosing the drawing tool with the left
  mouse button, holding down the left mouse button and mov-
  ing the mouse to create the object, releasing the left mouse
  button, moving the object where you want it, and clicking the
  right mouse button to paste down the object.

* How to change an object's pattern by choosing Styles from the
  Pattern menu, then choosing a pattern in the Pattern Styles
  dialog box.

* How to choose a color from the Color menu.

* How to choose a line width from the Line menu.

* How to place text in a drawing by choosing Text from the
  Pop-Up menu, drawing a text box, clicking the right mouse
  button to paste down the text box, typing the text, then clicking
  the right mouse button to paste down the text itself.

* How to change the size of text by choosing a height from the
  Text menu.

* How to save and name a drawing.

* How to print a drawing.

* How to quit Easy-Draw.

At this point you should just start Easy-Draw again and explore
the various drawing tools and commands. Just try it out; you can-
not damage the program or your computer while exploring Easy-
Draw.

If you want to feel a little more confident before jumping in, why
not go through the exercises in this section again. Once the steps
you practice here feel comfortable and natural, then exploring
Easy-Draw will be more fun.

Above all, enjoy yourself with Easy-Draw.

Master Drawings

This section describes advanced techniques that are not covered at all in the first part of this book, or are covered only partially. This section contains the following topics:

* Using the Clipboard for temporary storage
* Combining objects using two windows
* Setting up colors
* Working on patterns
* Selecting and working on more than one object at a time
* Grouping objects and working on the group
* More about printing
* Controlling the drawing surface by adjusting the zoom, scale, ruler, grid, and snap

Using the Clipboard for Temporary Storage

You can temporarily store an object or area of one drawing on the clipboard. One benefit of this technique is that you can make provisional deletions from your drawing to check how they look without permanently altering the drawing. Thus, the clipboard can help you experiment.

Also, if your drawing is very large, it may be easier to move an object from one part to another using the clipboard.

To store objects on the clipboard, follow these directions:

[1] Select the object or area you want to store on the clipboard.

[2] Copy or move the object or area to the clipboard.

To copy an object, select the object, choose Edit Copy, then move the copy to the clipboard.

To move an object, select the object, then point inside it and hold down the left mouse button, move the object over the clipboard, then release the left mouse button.

Note: When something is being stored on the clipboard, the clipboard turns black.

To move objects from the clipboard back into the same drawing or other file, follow these directions:

[1] Point to the clipboard, hold down the left mouse button.

A box a little larger than the clipboard will appear under the open hand pointer.

[2] Move the box into the window.

Position the upper left corner of the box where you want the upper left corner of the object, multiple objects, or group.

[3] Release the left mouse button to drop the objects.

The clipboard is empty after you move the objects off it.

Note: Each time you move or copy an object to the clipboard, it replaces any object currently on the clipboard. Unlike the drawing surface, which can have many layers, the clipboard has only one layer.

To move or copy objects from one part of your large drawing to another, follow these directions:

[1] Copy or move the objects to the clipboard.
[2] Scroll the drawing.
[3] Move the objects from the clipboard back onto the drawing surface.

Combining Objects Using Two Windows

Easy-Draw gives you two windows to work with. Two windows
are especially useful for combining objects between two Easy-
Draw drawings. By opening a second window and placing a
drawing in it, you can copy objects directly.

To combine objects using two windows, follow these directions:

[1] Choose FILE OPEN #2
[2] Choose FILE REPLACE
     Easy-Draw displays the File Selector box to ask you for the
     name of a drawing.
[3] Choose a drawing for window #2 in the File Selector box.
[4] Click OK
     Window #2 is now the active window.
[5] Copy objects from the drawing in window #2 to the other.
     Select the objects, then:
     To copy, point into the object, hold down the left mouse
     button, move the object to the other window where you want
     it, then release the left mouse button.

Note: If you leave the second window blank, you can use it as a
sketch pad to create parts of a drawing, then move them into win-
dow #1 as needed. Then, when you close window #2, don't save
the scratch objects, and you won't take up disk space
unnecessarily.

To activate the other window for work, point inside the window,
then click the left mouse button. The title bar of the active win-
dow is gray rather than white.

Setting Colors

You can draw your objects in four colors. The Color menu displays the current color choices. You can change the choices through the Desktop Control Panel.

The Color Menu

You can make all objects--lines, patterns, and text--the same color; or you can make each type of object its own color.

To make all objects the same color, follow these directions:

[1] Point to the Color menu.
[2] Point to the number for the color you want all selected and subsequent objects to be.
[3] Click the left mouse button.

To set colors individually for the three types of objects (lines, patterns, and text), follow these directions:

[1] Choose COLOR SETTINGS
[2] Choose the desired color number for each of the types of objects.

     You can scroll the color choices if your computer has more than four colors by pointing to the arrows and clicking the left mouse button.
[3] When the color settings are the way you want them, click OK.

Setting Up Color Choices: Control Panel

Even though Easy-Draw offers you only four colors at a time, you can choose from many more colors so that you don't always have only black, white, red, and blue.

To set color choices, follow these directions:

[1]   Choose CONTROL PANEL from the Desk menu.
      The Control Panel box appears, as follows:
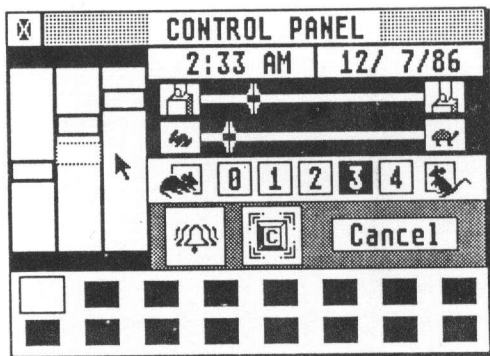
[2]   Choose which color you want to change on the palette.
[3]   Change the color controls to adjust the color.

      Each color is a combination of red, green, and blue.

      To change a color:

      Click on the letter at the top or bottom of each control to in-
      crease or decrease the color brightness by one step (each
      color has eight steps, from 0-7)

      -- or --

      Point to a boxed number, hold down the left mouse button,
      move the box along the control to the new number setting
      (new number appears in the box when you release the left
      mouse button).

[4]   When the colors are the ones you want, click the Close box
      in the upper left corner of the dialog box.

Refer to *Atari 520ST Computer Owner's Manual* for directions for
other parts of the Control Panel dialog box.

Note: At the time of this printing, there is not a high resolution
color output device available. So, for the present, most printouts
will be black and white regardless of what colors are set.

Working on Patterns

Easy-Draw provides forty patterns for filling objects. One of the patterns is blank, or no pattern. Another pattern is a "user" pattern, a pattern you can create for yourself.

Using the Easy-Draw Patterns

To fill the selected and subsequent objects with one of the Easy-Draw patterns, follow these directions:

[1]   Choose PATTERN STYLES from the Pattern menu.

      The PATTERN STYLES dialog box will appear, showing the forty patterns.

[2]   Point to the pattern you want.

[3]   Click the left mouse button.

To change the pattern in an object:

[1]   Select the object.

[2]   Choose the new pattern.

      Easy-Draw replaces the old pattern with the new one.

Creating and Using Your Own Pattern

To create your own pattern for the "user" slot in the Pattern Styles
dialog box, follow these directions:

[1]   Choose USER PATTERN from the Pattern menu.

      The User Pattern dialog box appears, as follows:

```
┌─────────────────────────────────────────┐
│ User Pattern:                [▓▓▓▓]      │
│                                          │
│  ▓ ▓ ▓ ▓ ▓ ▓ ▓ ▓                         │
│  ▓ ▓ ▓ ▓ ▓ ▓ ▓ ▓         [ Clear  ]      │
│  ▓ ▓ ▓ ▓ ▓ ▓ ▓ ▓                         │
│  ▓ ▓ ▓ ▓ ▓ ▓ ▓ ▓         [ Invert ]      │
│  ▓ ▓ ▓ ▓ ▓ ▓ ▓ ▓                         │
│  ▓ ▓ ▓ ▓ ▓ ▓ ▓ ▓          [ Move  ]      │
│  ▓ ▓ ▓ ▓ ▓ ▓ ▓ ▓                         │
│  ▓ ▓ ▓ ▓ ▓ ▓ ▓ ▓          [ Copy  ]      │
│                                          │
│                            [   OK   ]    │
│   [  SAVE  ]   [  LOAD  ]                 │
│                            [ CANCEL ]    │
└─────────────────────────────────────────┘
```
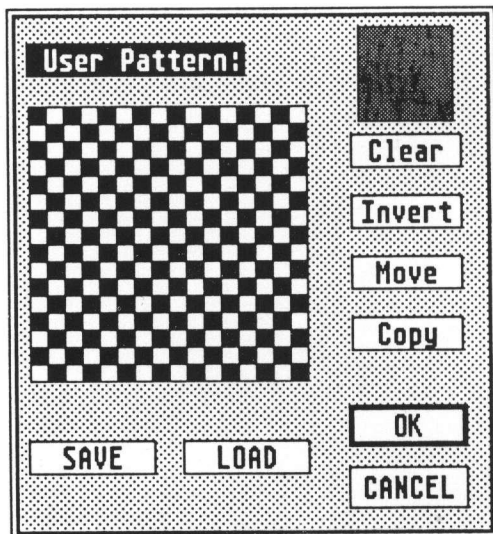
[2]   Fill in the grid to create a pattern.

      Click the left mouse button to insert a black dot. Hold down
      the left button and move the mouse to insert many dots in
      one motion.

      Click the right mouse button to insert a white dot (removes
      a black dot). Hold down the right button and move the
      mouse to erase many dots in one motion.

      Hold down both buttons at the same time and move the
      mouse to insert a checkerboard pattern.

      Click Clear to erase all dots.

      Click Invert to switch all dots to white and all white to dots.

      Click Move or Copy to move or copy part of a pattern from
      one place to another in the grid.

When you click Move or Copy, a rubber band box appears around the whole grid. Hold down the left mouse button to size the rubber band box. Release the left mouse button, then move the rubber band box to the area you want to move or copy. You can press the left mouse button again to adjust the size of the rubber band box if it is not exactly right. Click the right mouse button to select the area to move or copy. If you are moving, the pattern disappears. Move the rubber band box to the new location. Click the right mouse button to paste down the pattern at the new location.

[3] Preview your pattern in the preview window inside the dialog box.

The preview window shows two copies of your pattern side by side.

[4] Click OK when the pattern is the way you want it.

Note: You can have only one user pattern per drawing. When you change the user pattern, Easy-Draw will switch the pattern in any object with the user pattern as soon as you make the next change to the drawing, including saving the drawing.

To use your own pattern:

[1] Create the pattern if you haven't already done so.
[2] If you have already created and saved your pattern, choose the user pattern box (bottom right box) in the PATTERN STYLES dialog box.

Saving and Loading Your Patterns

After you've created your own pattern, you can save it and use it the next time you start Easy-Draw. If you do not save the pattern, Easy-Draw discards it when you quit Easy-Draw.

To save your pattern, follow these directions:

[1] Choose Save in the dialog box.
[2] Give the pattern a name.

To load one of your patterns for use in a drawing, follow these directions:

[1]   Choose User Pattern from the Pattern menu.
[2]   Choose Load in the dialog box.
[3]   Type or choose the name of the pattern you want to use.

Working on Multiple Objects

Just as you can work on a single object, you can also select and work on more than one object at a time. Once you have selected several objects at the same time, you can change them all at the same time in most of the ways you can change a single object: change the pattern, line width and style, and color; delete, move, copy, align, rotate, and shadow; and group them into a single object (see the chapter entitled "Working on a Group of Objects" for details of grouping objects).

Note: To size or rotate multiple objects at the same time and keep their relationships, you have to group them, then size or rotate the group.

To work on a number of objects at the same time, you select an area of the drawing.

To select more than one object (an area), follow these directions:

[1] Be sure you are selecting rather than drawing.

The pointer must be the finger pointer, not the cross hair. If it is a cross hair, click the right mouse button while the pointer is over the desktop.

[2] Position the finger pointer at the upper left corner of the area you want to select.

[3] Hold down the left mouse button and move the mouse to draw a rubber band box around the area you want to select.

[4] When the rubber band box encloses all the objects you want to select, release the left mouse button.

All of the objects that are entirely inside the rubber band box are selected and show their object boxes. You can select additional objects (hold down Shift key and press left mouse button) or unselect individual objects (hold down Shift key and press right mouse button). You can now work on all of the selected objects at the same time.

To unselect multiple objects, follow one of these directions:

[*]   Point to the drawing surface away from any objects, and
      click the left mouse button.

      If there is no free area on the drawing surface, point to the
      desktop, and click the left mouse button.

-- or --

[*]   Switch to drawing by clicking the right mouse button.

What Happens to Multiple Objects

With multiple objects selected, any change you make affects all of
the selected objects the same. For example, changing the color to
red changes all the lines, patterns, and text in all the selected ob-
jects to red. The technique works and looks the same as the tech-
nique for changing the color of a single object.

Moving multiple objects, however, appears differently from mov-
ing single objects, even though the technique is the same.

Selecting multiple objects also gives you the chance to use the
Align commands on the Arrange menu. The Align commands
have no effect on single objects.

Note: If the objects have different colors, patterns, or line width
and style when you select them, the differences are retained. If
you make any change, however, all of the selected objects will
change in the same fashion (that is, a new pattern, color, and so
on).

Moving Multiple Objects

You can move multiple objects together and keep their relation-
ship to each other. While you are moving them, only boxes show-
ing the objects size move. The objects move into position when
you release the mouse button.

To move multiple objects, follow these directions:

[1]   Point into one of the selected objects.
[2]   Hold down the left mouse button.

      A box with an X across it appears over the object, and a box
      appears around the area containing all the selected objects.

[3] With the left mouse button held down, move the X box to the new location, then release the left mouse button.

The objects move into position at the new location. All of the objects are still selected.

Aligning Multiple Objects

One of the common reasons for selected multiple objects is to align them.

To align two or more objects, follow these directions:

[1] Select the objects you want to align by selecting the area around them.

[2] Point to the Arrange menu.

[3] Point to the Align command you want to use and click the left mouse button.

The Align commands arrange all of the selected objects as
follows:

LEFT   All objects line up at the left edge of the
                     leftmost selected object.

CENTER   All objects line up at the central point be-
                     tween the left edge of the leftmost selected
                     object and the right edge of the rightmost
                     selected object. Does not affect vertical (up
                     and down) positioning; only horizontal (right-
                     left).

RIGHT   All objects line up at the right edge of the
                     rightmost selected object.

TOP   All objects line up at the top edge of the
                     topmost selected object.

MIDDLE   All objects line up at the central point be-
                     tween the top edge of the topmost selected
                     object and the bottom edge of the bottom-
                     most selected object. Does not affect hori-
                     zontal (right-left) positioning; only vertical
                     (up and down).

BOTTOM   All objects line up at the bottom edge of the
                     bottommost selected object.

CENTER OF   All objects are centered horizontally or verti-
PAGE   cally on the page, as you choose.

EQUAL   All objects are spaced apart equally, either
SPACING   horizontally or vertically, as you choose.

Working on a Group of Objects

A drawing is usually a combination of many objects. Within a drawing, you will place some objects near each other to form some shape, such as a door on a kitchen cabinet or a piece of furniture. You probably would consider each of these shapes as a single piece, and being able to handle them as a single piece rather than as multiple objects is very convenient and efficient. Easy-Draw has a command for grouping multiple objects into a single piece so that it then becomes a single object. Making changes to a group of objects is exactly the same as making changes to a single object.

Creating a Group

To group objects, follow these directions:

[1]   Select all the objects you want to group.

Position the finger pointer at the upper left corner of the area you want to select. Hold down the left mouse button and move the mouse to draw a rubber band box around the area you want to select. When the rubber band box encloses all the objects you want to select, release the left mouse button. All of the objects will show their object boxes.

You can select additional objects (hold down Shift key and press left mouse button) or unselect individual objects (hold down Shift key and press right mouse button).

[2]   Choose CREATE GROUP from the Arrange menu.

The group will have a single object box around it.

Once you have created a group, you select it by moving the finger pointer anywhere inside the group and clicking the left mouse button.

An object group can be an object in another group. Using groups to form another group object is called a multi-level group. You create a multi-level group the same way you create a group from single objects. Working on a multi-level group is the same as working on a single level group.
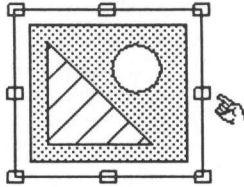
Note: If the objects have different colors, patterns, or line width and style when you select them, the differences are retained. If you make any change, however, all of the selected objects will change in the same fashion (that is, a new pattern, color, and so on).

Dissolving a Group

To change a group of objects back to multiple objects, follow these directions:

[1] Select the group.

Move the finger pointer anywhere inside the group and click the left mouse button.

[2] Choose EXPLODE GROUP from the Arrange menu.

You can now work on the selected objects as multiple objects or individually.

Note: If the main group contains several small groups, the sub-groups are maintained until you explode their level.

Changing a Group of Objects

Changing a group of objects is the same as changing a single object because a group becomes a single object. When you copy a group, the copy contains all the objects as a group, which can also be dissolved (exploded). Ease of sizing, rotating, and copying are probably the major reasons to group objects rather than simply dealing with them as multiple objects.

Changing the Size of a Group Object

Once you create a group object, you can select it as a single object and change its size.

Note: Even if multiple objects are selected, if they are not grouped, you can change the size of only one object at a time.

To change the size of a group object, follow these directions:

[1]   Select the group object.

Move the finger pointer anywhere inside the group object and click the left mouse button. An object box appears around the group.

[2]   Place the tip of the finger pointer in the middle of the appropriate sizing marker.

The sizing markers control the following changes:

Top, bottom, left, and right sizing markers move their sides in and out only.

Corner sizing markers move two sides in and out.

[3]   Hold down the left mouse button and move the sizing marker to change the size of the group object.

[4]   When the group object is the size you want it, release the left mouse button.
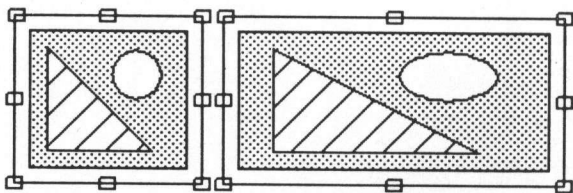
Copying a Group Object

Making a copy of a group object is the same as making a copy of a single object.

To copy an object or group object, follow these directions:

[1]   Select the object or group object.

Move the finger pointer inside the object or the group, then click the left mouse button.

[2]   Choose COPY from the Edit menu.

[3]   Move the copy where you want it.

Move the finger pointer inside the copy, hold down the left mouse button, move the mouse to move the copy to the new location, then release the left mouse button.

A group object gives you the ability to copy many objects at once, and the copy is easier to position than many individual objects. You can also dissolve (explode) a copy of a group object to change it back to individual objects.

More About Printing

"Printing the Drawing" in the "First Drawings" section teaches you how to print the drawing you are working on. The Size command on the Page menu and the Output command on the File menu can be used to perform the following additional printing chores:

* Print any drawing.
* Choose the size of paper and the direction of printing.
* Print drawings on the screen.
* Edit a printing list of drawings.
* Save and reuse a printing list of drawings.
* Set options for printer or screen printing.
* Print two or more drawings in any order.
* Print multiple copies of a drawing.

Note: Single disk drive owners must place their drawing disk in drive A before quitting from Output. Dual drive owners should already have their drawing disk in drive B.

Printing consists of the following major steps:

<u>To Print Any Drawing</u>

[1] Choose Output from the File menu.

The Output menu bar replaces the Easy-Draw menu bar, and the printing list appears.

[2] Choose Add Name from the Edit menu to add a drawing name to the printing list.

The File Selector box appears.

[3] Type or choose the name of the drawings you want to print.

[4] Choose Start Output from the File menu.

The Start Output dialog box appears.

[5] Click on PRINTER.

[6] Click on OK to start printing.

[7] When printing is finished, choose Quit from the File menu to quit printing and to return to Easy-Draw.

<u>To Print Drawings on the Screen</u>

[1] Click SCREEN in the START OUTPUT dialog box.
[2] Click OK to start displaying the drawings on the screen.
[3] Any time after the drawing appears on the screen, press a
     key to see the next drawing.

Note: See "To set options for printer or screen printing" for ad-
ditional controls over screen printing.

The following sections provide variations of these steps for the
additional printing chores. After making your choices for the ad-
ditional chores, continue with the major steps to printing your
drawings.

Working With the Printing List

OUTPUT provides a fill-in form for you to list the drawings you
want to print or display on the screen. The printing list is espe-
cially useful when you print more than one drawing during an
output session, or if you want to print different numbers of copies
of various drawings; for example, three copies of one drawing,
five copies of another, and so on. Also, you can print the drawings
in any order by arranging the names on the list.

<u>To Edit a Printing List</u>

With the printing list visible on the screen, you can edit the
printing list in the following ways:

* Add names
* Clear the list (start a new list)
* Copy names
* Delete names

Add Names

[1]   Choose ADD NAME from the Edit menu.
[2]   Type or choose drawing names in the File Selector box.
[3]   Click on OK to add the names to the printing list.

      The names will appear in the printing list in the order they
      appear in the directory.

```
┌─────────────────────────────────────────────┐
│                                              │
│   ITEM SELECTOR                              │
│                                              │
│  Directory:                                  │
│  B:\*.GEM_____       │
│                                              │
│   ▣▒▒▒▒▒▒▒ *.GEM ▒▒▒▒▒▒▒      Selection:      │
│                           ⇧   EZINFO   .GEM  │
│       AUTO    .GEM                            │
│       CHURCH  .GEM                            │
│       COMPUTER.GEM                            │
│       EZINFO  .GEM                            │
│       EZINFOB .GEM                            │
│       EZINFOG .GEM              ┌──────────┐  │
│       FEATURES.GEM              │    OK    │  │
│       FORM1040.GEM              └──────────┘  │
│       HOUSE   .GEM           ┌──────────┐     │
│                        ⇩     │  Cancel  │     │
│                              └──────────┘     │
│                                              │
└─────────────────────────────────────────────┘
```
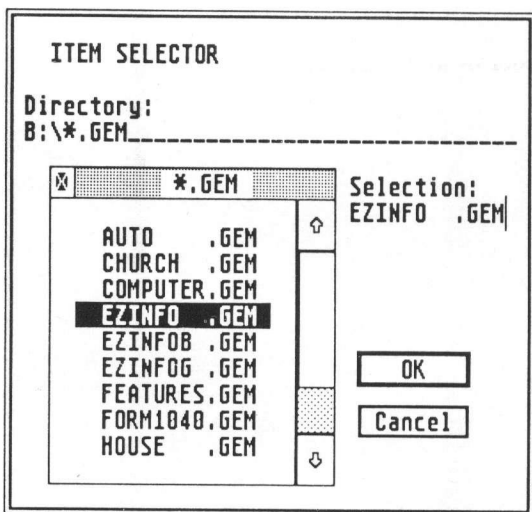
Clear the List (Start a New List)

[1] Choose NEW from the File menu.

[2] If Output reminds you to save the printing list, click Continue to discard the current list;

Or, click Cancel to stop, save the printing list, then repeat step 1.

Copy Names

[1] Select the drawing names in the printing list by holding down the Shift key then clicking on each name you want to copy.

[2] Choose DUPLICATE NAME from the Edit menu.

Delete Names

[1] Select the drawings names in the printing list by holding down the Shift key then clicking on each name you want to delete.

[2] Choose DELETE NAME from the Edit menu.

To Save a Printing List

[1] Choose SAVE AS from the File menu.

[2] Type a name for the printing list.

Output adds .LIS to the end of your list name.

Also, if you want, type a pathname (disk drive name, colon, slash, and directory name).

[3] Click on OK.

```
┌─────────────────────────────────────────────┐
│ ┌─────────────────────────────────────────┐ │
│ │  ITEM SELECTOR                          │ │
│ │                                         │ │
│ │  Directory:                             │ │
│ │  B:\*.LIS_____       │ │
│ │  ┌────────────────────┐                 │ │
│ │  │▧░░░░░  *.LIS  ░░░░░░│  Selection:     │ │
│ │  │                   ⭡ │  DEMO    .LIS│  │ │
│ │  │  COMDEX  .LIS     │ │                 │ │
│ │  │  DEALER  .LIS     │ │                 │ │
│ │  │  DEMO    .LIS     │ │                 │ │
│ │  │  DOCUMENT.LIS     │ │                 │ │
│ │  │  EASYDRAW.LIS     │ │                 │ │
│ │  │  MIGRAPH .LIS     │ │  ┌──────────┐   │ │
│ │  │  REV2    .LIS     │ │  │    OK    │   │ │
│ │  │  XMASAD  .LIS     │ │  └──────────┘   │ │
│ │  │  _____.___   ⭣ │ │  [ Cancel ]    │ │
│ │  └────────────────────┘                 │ │
│ └─────────────────────────────────────────┘ │
└─────────────────────────────────────────────┘
```
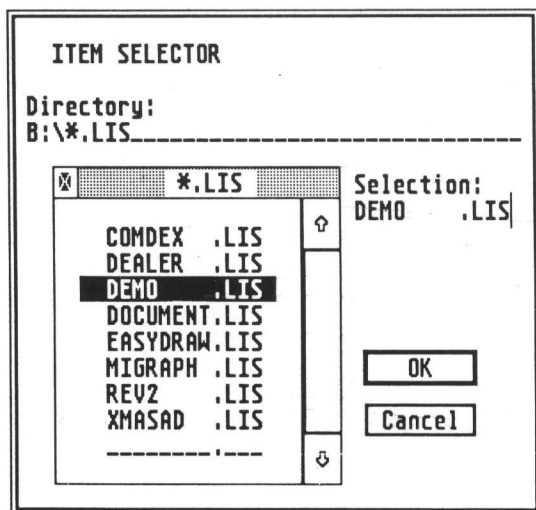
<u>To Reuse a Printing List</u>

[1]   Choose OPEN from the File menu

[2]   Type or choosing the list name in the File Selector box

[3]   Click on OK.

Setting Output Options

You can change the way printer or screen printing works, then
save your changes and retrieve them during a later printing ses-
sion. To permanently set your changes, you can establish default
choices.

To Set Printer Options

[1]   Choose PRINTER from the Options menu.

[2]   Click on your choices of options:

"Scale: best fit" shrinks or stretches your drawing to fill the
page. Use this option to fit legal and double size drawings on
one 8.5" x 11" sheet.

"Scale: full scale" prints your drawing actual size, using sev-
eral sheets, if necessary.

"Horizontal/Vertical" aligns your drawing according to the
justification option you choose: top, middle, or bottom.

[3]   Click on OK.

Note: The Easy-Draw PAGE SIZE command controls other
printing options.

```
┌─────────────────────────────────────────────────────────┐
│  PRINTER OPTIONS                                          │
│                         Scale:  Full Scale   Best Fit     │
│             Initial Form Feed:   Yes    - No              │
│               Final Form Feed:   Yes      No              │
│     Horizontal Justification:  Left   Center  Right       │
│       Vertical Justification:   Top   Center  Bottom      │
│         Print in Background:    Yes      No               │
│                                          OK    Cancel     │
└─────────────────────────────────────────────────────────┘
```

To Set Screen Options

[1]   Choose SCREEN from the Options menu.

[2]   Click on your choices of options:

"Wait for" determines the time between the display of each
drawing.

"Cycle" means to repeat the display over and over.

[3]   Click on O

```
┌─────────────────────────────────────────────┐
│  SCREEN OPTIONS                               │
│                                               │
│                        Seconds                │
│        Wait for:  [Key] [2] [5] [10] [20]     │
│           Cycle:  [No] [Yes]                  │
│                                               │
│                        [  OK  ]  [Cancel]     │
└─────────────────────────────────────────────┘
```

<u>To Save Options Settings</u>

[1]   Choose SAVE OPTIONS from the File menu.
[2]   Type a name for the options file.
[3]   Click on OK.

<u>To Reuse Previously Saved Options Settings</u>

[1]   Choose GET OPTIONS from the File menu.
[2]   Type or choose the name of the options file.
[3]   Click on OK.

<u>To Set Default Options</u>

Default means your choices are remembered and preset. Default choices make it faster to print because you don't have to change the settings each time you print.

[1]   Set option choices for the printer and the screen.
[2]   Choose Make Default from the Options menu.

Starting Output

When all the options are set and your printing list is ready, you
can start printing. To start printing:

[1]   Choose START OUTPUT from the File menu.

[2]   Click on your choice of printer or screen.

[3]   If the number of copies you want to print is different from
      the number shown, type the number.

      OUTPUT will print this number of copies of all the drawings
      in the printing list. If you want different numbers of copies
      for the various drawings, list them that number of times in
      the printing list.

[4]   Click on OK to start printing.

```
┌─────────────────────────────────────────────────────────────┐
│ START OUTPUT                                                  │
│                                                               │
│           Device:  [ Screen ]  Printer  [ Plotter ] [ Camera ]│
│                                                               │
│  Number of copies:  01                                        │
│                                          [    OK   ] [ Cancel ]│
│                                                               │
└─────────────────────────────────────────────────────────────┘
```

Adjusting the Drawing Surface

You can make three types of changes to the Easy-Draw drawing surface:

* Adjust the ruler and the grid
* Scroll the drawing
* Zoom the drawing

Adjusting the Ruler and the Grid

You can adjust the ruler and the grid in the following ways:

* Turn the ruler display on and off
* Adjust the grid markings on the page
* Turn the grid display on and off
* Turn grid snap on and off

Turning the Ruler On and Off

When the ruler is on, you can visually align objects on specific measurement markings. Easy-Draw does not scale for you.

[*] To turn the ruler on or off, choose PAGE RULER DISPLAY ON/OFF from the Page menu.

Adjusting the Grid Markings on the Page

You can adjust the spacing between the grid markings on the page. When you do this with SNAP ON, Easy-Draw automatically uses the grid settings to snap during drawing or moving of objects.

You can choose from the following spacings:

Imperial	Metric
1/32 inch	1 millimeter
1/16 inch	2 millimeters
1/12 inch	5 millimeters
1/10 inch	1 centimeter
1/8 inch	2 centimeters
1/4 inch	3 centimeters
1/2 inch	
1 inch	

To choose a different spacing for the grid, follow these directions:

[1]   Choose PAGE GRID SPACING
[2]   In the dialog box, choose the spacing you want.
[3]   Click OK.

You can adjust the spacing at any time. Even if the ruler is not on display, the change of spacing will affect the spacing of the grid.

Turning the Grid Display On and Off

The grid display provides visual guidance for positioning objects. Particularly if grid snap is on, seeing the grid dots will help you see how and where to align your objects. If you don't need or like seeing the grid, you can turn it off.

[*]   To turn the grid display on or off, choose GRID DISPLAY
      ON/OFF from the Page menu.

There is a practical and aesthetic limit to the number of dots that appear on the screen. If there are too many dots, you'd see only a mess of lines filling the drawing surface, and it would be difficult to see your objects. Easy-Draw limits the number of dots, depending on the zoom level of your drawing window.

At ZOOM NORMAL level, the smallest grid spacing which would be visually accurate is eight dots per inch; that is, $1/8^{th}$ inch spacing between dots.

If you use ZOOM AREA to zoom in closer to your drawing, Easy-Draw will show visually accurate spacings if you have the grid settings closer together than $1/8^{th}$ inch. At very great magnification

of your drawing, you can see the grid dots for $1/32^{th}$ inch. Note, however, that the dots will appear in the window spread farther apart than $1/32^{th}$ inch because the space between them has been magnified along with the objects in your drawing.

Recommended Grid Settings

Zoom level	Imperial	Metric
Zoom Full Page	1/4", 1/2", 1"	2mm or larger
Zoom Normal	1/8", 1/4", 1/2", 1"	2mm or larger

Turning Grid Snap On and Off

Grid snap helps you precisely align your objects with one another. When grid snap is on, the drawing cursor is snapped to the nearest grid dot as if they were small magnets. Likewise, when you move an object, the object's top left corner will be lined up on the nearest grid dot. Grid snap is most helpful with regular geometric objects. The size of new objects is adjusted to the grid lines when you paste them down. If you want to create objects in sizes that fall between the grid dots, you can turn off grid snap or select a smaller spacing.

[*] To turn on or off grid snap, choose PAGE GRID SNAP ON/OFF from the Page menu..

Note: When grid snap is on, it is also recommended that you turn on the grid display.

Scrolling the Drawing

You can create drawings that are as large as the sheet of paper you will be printing on. (Use the Page Size command to tell Easy-Draw what size paper you will be printing on.) The Easy-Draw window shows only a part of a sheet at any one time. When your drawing is larger than the window, you will naturally want to be able to move to the parts of the drawing that are outside the window so you can continue your work. Moving the drawing so that the parts outside the window come into view is called scrolling.

To scroll a drawing, use one of the following techniques:

*   Point to one of the sliders, hold down the left mouse button, then slide the slider in the direction you want to see. Release the mouse button to move the drawing.

*   Point to the area inside the scroll bar that is outside the slider, then click the left mouse button. The slider moves into the part of the scroll bar where you click and scrolls the drawing by the height or width of the window.

*   Point to one of the arrows in the appropriate scroll bar, and click the left mouse button. Each click moves your view of the drawing in the direction of the arrow; that is, the up arrow moves your view towards the top of the drawing. Each click moves the drawing by the amount of the space between the ruler markings. (See "Adjusting the Markings on the Ruler" for details of the spacing on the ruler.)

Zooming the Drawing

When you start Easy-Draw, you will see your objects in the actual size they will be printed. This is called normal view, or ZOOM NORMAL. For fine detail work, you may want to see a closer view of your objects. To get a closer view, you zoom in on the drawing. Similarly, you may want to see how objects are placed on the whole page. To see the whole page at once, you zoom out from the drawing to FULL PAGE view.

You have four choices for zooming your drawing:

Zoom level	To see
AREA	Closer view of drawing
FULL PAGE	Whole page at once
NORMAL	Objects actual size
LAST	Previous zoom level

Zoom Area

To zoom in closer, follow these directions:

[1]   Choose ZOOM AREA

[2]   Move the mouse pointer to the upper left corner of the drawing area you want to zoom.

[3]   Hold down the left mouse button, draw a rubber band box around the area you want to zoom, then release the left mouse button.

Easy-Draw expands the shortest side of the area inside the rubber band box to fill the window. You control the amount of zoom by the size of rubber band box you draw. If you draw a small box, you zoom in very close to your drawing. If you draw a large box, you zoom only a small amount.

You can use the ZOOM AREA command repeatedly to move in closer to the drawing.

Note that you can still scroll your drawing, regardless of the amount you have zoomed into your drawing.

You can add objects to your drawing while you are zoomed in close to your drawing. Note, however, that the objects you draw while zoomed in will be smaller when you look at them in ZOOM NORMAL. Switch to normal view to see the actual size. When you zoom in, text objects enlarge only to the nearest available point size. The available point sizes are shown on the Text menu.

Note: You can create or edit text objects only in ZOOM NORMAL.

Zoom Full Page

To zoom out from your drawing to see the whole page, choose ZOOM FULL PAGE. You'll see the whole sheet and the positions of your objects on it.

If your objects are very small, they will not be very clearly defined. Zoom in to see them more clearly.

You are advised to use ZOOM NORMAL while drawing objects rather than using ZOOM FULL PAGE. If you add objects to your drawing while you are at full page view, they will be larger when you look at them in ZOOM NORMAL.

Note: Although graphics are accurate at all zoom levels, text objects size and formatting are only accurate at ZOOM NORMAL.

Zoom Normal

After you have zoomed in or out, you may want to see the actual size of your objects. To see the actual size, you return to normal view by choosing ZOOM NORMAL.

Note: This is the level to do all your text work at.

Zoom Last

You can set up two different levels of zoom during your work to assist you as you draw. The ZOOM LAST command gives you a convenient way to switch between two levels of magnification.

To take advantage of the ZOOM LAST command, follow these directions:

[1]   Use ZOOM AREA to set up the smaller level of magnification.

The smaller level of magnification is the view that shows more of the total drawing.

To set a zoom level between full page and normal, switch to full page view, then use ZOOM AREA to decrease the magnification between full page and normal.

[2]   Use ZOOM AREA again to set up the larger level of magnification.

The larger level of magnification is the view that shows the objects up close.

[3]   Choose ZOOM LAST to switch between the two levels.

Note: If you choose ZOOM NORMAL or ZOOM FULL PAGE, ZOOM LAST will switch to that view. Be sure you are ready to give up one of your zoom levels before you choose ZOOM NORMAL or ZOOM FULL PAGE.

Sample Drawings

This section provides two sample drawings that illustrate various tasks you can use Easy-Draw to complete. These two samples are especially rich in merging of text and graphics to produce brochures. You'll see from these two samples how Easy-Draw can be used for desktop publishing.

The directions for the sample drawings assume that you are familiar with the following techniques, which are covered in the "First Figures" section, or refer to the index for page number.

* Selecting objects
* Changing to Point Mode
* Sizing objects
* Choosing commands
* Resizing GEM windows

In addition, you need to know how to move an existing object:

[1] Select the object
[2] Point inside the object.
[3] Hold down the left mouse button and drag the object to the new location.
[4] Release the mouse button.

Desktop Publishing:
Merging Text and Graphics

This sample drawing illustrates the following techniques:

* Merging GEM files
* Loading an outside text file
* Reformatting text blocks
* Breaking text blocks
* Stretching groups

Note: Single-Drive Systems Remember to replace your Easy-Draw Master Disk with your Drawing Disk once you have started Easy-Draw.
Dual-Drive Systems Remember that you need to change the path in the File Selector box from A: to B: if you keep your Drawing Disk in drive B.

Note: The directions for this sample drawing assume that you are familiar with some basic techniques, which are covered in the "First Figures" section, and listed at the beginning of this section.

[1] Start Easy-Draw and load (FILE REPLACE REPLACE) EZINFOB.GEM.

[2] Merge (FILE REPLACE MERGE) the second drawing, EZINFOG.GEM.

[3] Select the large empty text block below the Migraph logo, choose EDIT TEXT, then click in the text block again.

You should see the following:
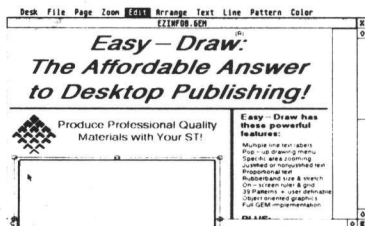
[4]   Press F1 (to load a text file), then select EZINFO.TXT.
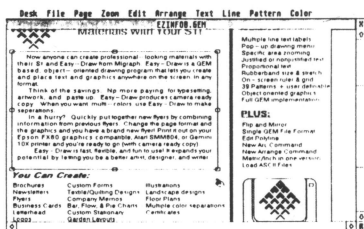
[5]   Resize the text box to a little less than one-half its width.
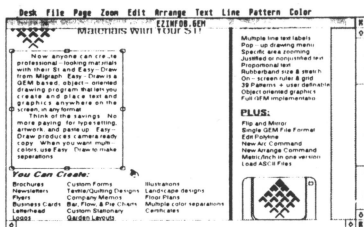
[6]   Move the arrow to end of the last visible paragraph and click the mouse button to position the cursor there.
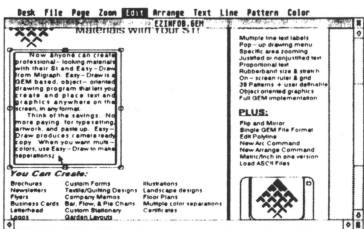
[7]   Press F10 to break the text block.
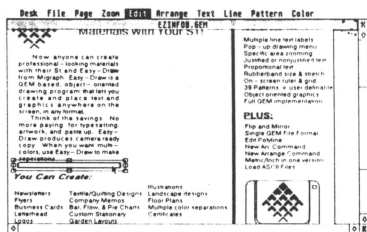
[8]   Move the new text block to right, then stretch it downward as shown. Click the right mouse button to paste down the new text block.
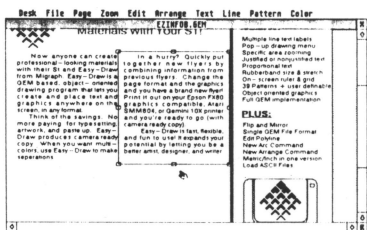
[9]   Select the Migraph logo that is above and left of the text. Choose EDIT COPY, then move the logo copy below the first text column.
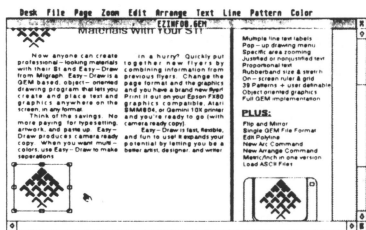
[10]   Stretch logo to fill the area below the two text blocks.
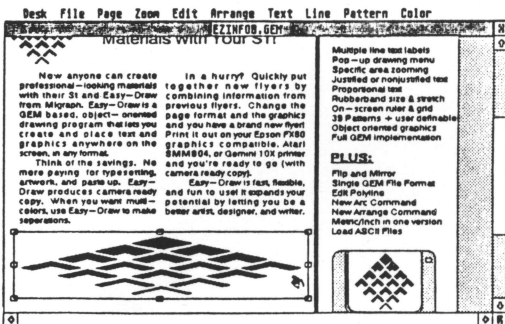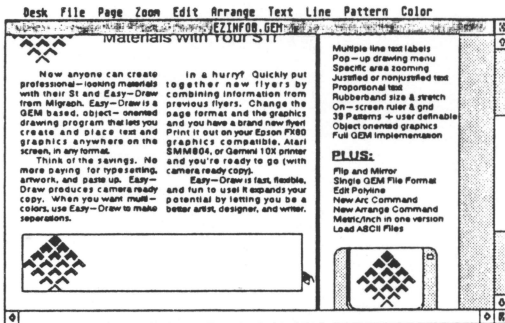
Sizing Entire Graphics Drawings

This sample drawing illustrates the following techniques:

* Deleting text
* Grouping objects
* Resizing a whole drawing
* Using two windows
* Copying an object to another page

Note: If you skipped the first sample drawing, please see the note at the beginning of the Desktop Publishing sample about drawing disks.

Note: The directions for this sample drawing assume that you are familiar with some basic techniques, which are covered in the "First Figures" section, and listed at the beginning of this section.

[1] FILE REPLACE REPLACE HOUSE.GEM.

[2] Click on the text in the upper left corner and drag it to the Trash can.
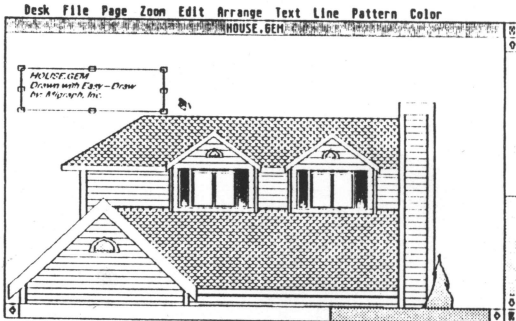
[3]   Choose PAGE SELECT ALL, which displays object boxes around all parts of the house.
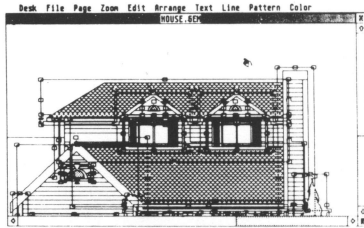
[4]   Choose ARRANGE CREATE GROUP to turn the house into a single object.
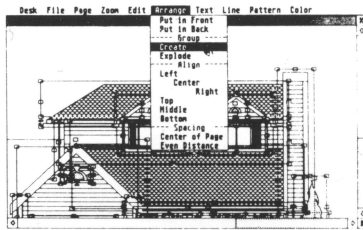
[5]   Resize house to approximately 2" x 2".
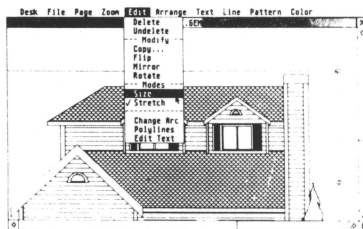
[6]   Resize the window to a little less than one-half the screen.

[7]   Choose FILE OPEN #2 to open a second window.
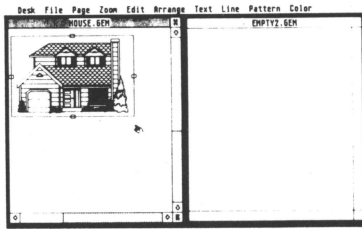
[8]   FILE REPLACE REPLACE EZINFO.GEM into window #2.
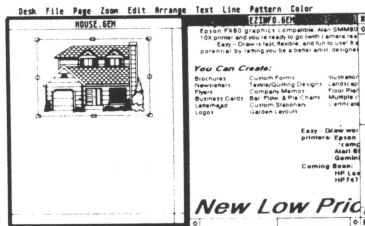
[9] Click inside window #1 to make it active, then drag a copy of the house into the blank area in window #2.
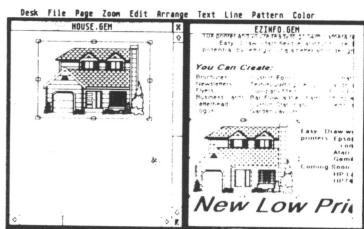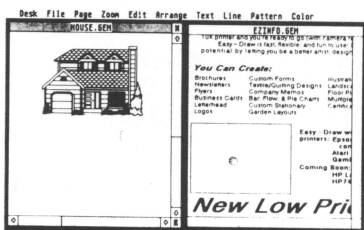
Summaries

This section provides a quick summary for easy reference of Migraph Easy-Draw commands, features, and techniques. When you just want to know something quickly, more as a reminder than to learn something completely new, this section will suit you.

This part of the manual is divided into these chapters:

Menu Commands	Brief descriptions of the action performed by each command on the menus
Screen	Description of the screen
Techniques	Summaries of the steps for every Easy-Draw command and feature
Hints	Hints on ways to use Easy-Draw more effectively and efficiently.

Menu Commands

The descriptions of the commands appear in the order they appear in the menus. All of the menus are shown together on the next page. Directions for using the commands appear in the two chapters entitled "Techniques" and "Hints."

Note: Menus that display * followed by a letter offer keyboard shortcuts for the experienced user. The * symbol means hold down the Alternate key and press the letter key.

Desk
EASY-DRAW info..

Control Panel
Install Printer

File
Replace...
Open #2..

Save   F1
Save As...

Output...
Quit

Page
Size ...
---- Rulers ----
Display ON ⌥T
---- Grid ----
Spacing ...
Display ON ⌥G
Snap   ON ⌥S

Select All ⌥A

Erase All   ⌥E

Zoom
Area
Normal   ⌥N
Full Page
Last   ⌥L

Edit
Delete
Undelete
---- Modify ----
Copy   ⌥C
Flip   ⌥F
Mirror   ⌥M
Rotate   ⌥R
Open/Close ⌥O
---- Modes ----
Size   ⌥Z
✓ Stretch ⌥X
---- Edit ----
Arc / Pie
Polyline
Text

Arrange
Put in Front
Put in Back
---- Group ----
Create   ⌥+
Explode   ⌥-
---- Align ----
Left
      Center
            Right
Top
Middle
Bottom
---- Spacing ----
Center of Page
Even Distance

Text
✓ Normal
Bold
Light
Italic
Outlined
Underlined
Justify
--- Size ----
7 Pt
✓ 10 Pt 1/8"
14 Pt
18 Pt 1/4"
28 Pt
36 Pt 1/2"
--- Fonts ---
Styles...

Line
None
✓ ————

·············
— · — · —
· — · · — ·
················
-- Widths --
▮ ▌ ▏ ▏
--- Ends ---
✓ ▬ ✓ ▬
  ▬   ▬
  ◄   ►

Pattern
Styles...
Transparent
Shadow
User Pattern..

Color
0   8
✓ 1   9
2   A
3   B
4   C
5   D
6   E
7   F

Settings...

Desk Menu

```
Desk
  EASY-DRAW info..
  --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
  Control Panel
  Install Printer
```
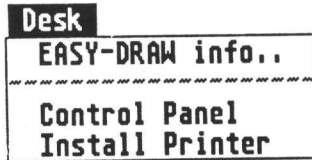
EASY-DRAW INFO [DESK]

Use Desk EASY-DRAW INFO to see the following information:

* Version number
* Number of objects currently in each window
* Total number of objects still available
* DT button
* OK button

Version Number shows you which revision of Easy-Draw you have.

Objects in Window 1 and **Objects in Window 2** show you how many objects make up the drawing in each window.

 # Objects Available shows you the total number of objects you still have room for.

DT Button empties the Trash can of the last object you deleted. Use the DT button when you run out of memory before you have finished your drawing.

Note: Once you click the DT button, the objects in the Trash can can no longer be recovered for use in your drawing.

OK Button makes the information box disappear so you can continue to work on your drawings.

```
                        (R)
               Easy-Draw
        Copyright (c) 1985,86  MIGRAPH,Inc
               Version: 2.00


        Consumer Applications Division
                Paul Mazurek,
    Kevin Mitchell, Doug Delong, Jim Wilson


    Figures in Window 1: 744        DT
    Figures in Window 2: 0

    # Figures Available: 15593        OK
```
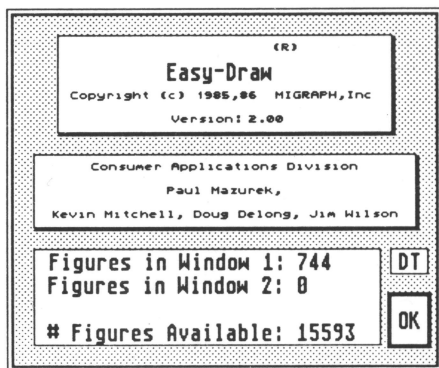
For a description of the Control Panel command, see the chapter entitled "Setting Colors," and see also your *Atari 520ST Computer Owner's Manual*.

The Install Printer command is used currently to enable the system to quick print (Alternate-Help keys) the screen correctly on your dot matrix printer. Note that the pixels per line must be set at 960.

File Menu

```
File
 Replace...
 Open  #2..
~~~~~~~~~~~~~~~~~~~
 Save      F1
 Save As...
~~~~~~~~~~~~~~~~~~~
 Output...
 Quit
```

The REPLACE and SAVE AS
commands display the File
Selector box where you can
tell Easy-Draw which
drawing you want to work
on or store.

```
┌─────────────────────────────────────────────┐
│                                              │
│    ITEM SELECTOR                             │
│                                              │
│  Directory:                                  │
│  B:\*.GEM_____        │
│                                              │
│  ┌─────────────────────┐   Selection:        │
│  │▒│      *.GEM      │  │   EZINFO  .GEM│     │
│  │                    │↑│                     │
│  │      AUTO   .GEM   │ │                     │
│  │      CHURCH .GEM   │ │                     │
│  │      COMPUTER.GEM  │ │                     │
│  │      EZINFO .GEM   │ │                     │
│  │      EZINFOB .GEM  │ │    ┌──────────┐     │
│  │      EZINFOG .GEM  │ │    │    OK    │     │
│  │      FEATURES.GEM  │ │    └──────────┘     │
│  │      FORM1040.GEM  │ │    ┌──────────┐     │
│  │      HOUSE  .GEM   │↓│    │  Cancel  │     │
│  └─────────────────────┘   └──────────┘       │
│                                              │
└─────────────────────────────────────────────┘
```
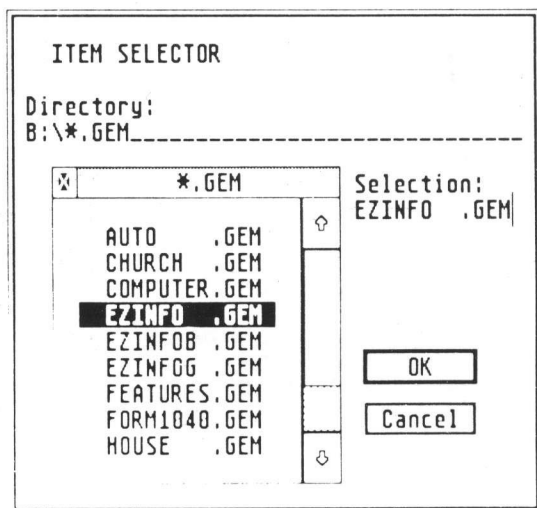
REPLACE [FILE]

Use FILE REPLACE to replace the drawing currently in the win-
dow (or a blank drawing surface) with another drawing, or to
merge drawings. Easy-Draw displays a pop-up menu containing
REPLACE and MERGE. When you choose one of these, Easy-
Draw displays the File Selector box to ask you for the name of the
drawing. See "Hints" for information about using more than one
disk drive.

```
┌────────────────────────────┐
│ Shall the file to be loaded│
│ replace or be merged with  │
│ the current drawing??      │
│  ┌─────────┐  ┌───────┐    │
│  │ REPLACE │  │ MERGE │    │
│  └─────────┘  └───────┘    │
└────────────────────────────┘
```
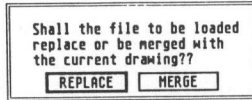
If you chose REPLACE and the drawing currently in the window or
changes to a drawing have not yet been saved, Easy-Draw asks
you if you want to save or discard them.

OPEN #2 [FILE]

Use FILE OPEN #2 to open a second drawing window, which will
have a blank, untitled drawing surface.

When two windows are open, activate the other window for work
by pointing inside it, then clicking the left mouse button.

Each window has its own settings for grids, page size, line type,
and so on. Remember: as you switch between windows, your set-
tings switch, too.

After you choose FILE OPEN #2, OPEN #2 is replaced with
CLOSE #2.

CLOSE #2 [FILE]

Closes the second drawing window. If you have not saved the
drawing or changes to an existing drawing, Easy-Draw asks you if
you want to save or discard them.

FILE CLOSE #2 replaces FILE OPEN #2 after you have opened the
second window.

SAVE [FILE]   F1

Use FILE SAVE to save changes you've made to an existing draw-
ing. If the drawing you are saving has never been saved before (a
new drawing), Easy-Draw automatically switches to FILE SAVE
AS.

SAVE AS [FILE]

Use File Save As to:

* Save a new drawing
* Save an existing drawing on a different disk
* Save an existing drawing with a different name

To save your drawing, type a name for your drawing in the File
Selector box (see the description of the File menu for a picture of
the File Selector box). Include disk drive and pathname informa-
tion if you want to store the drawing on a different disk drive or
directory.

OUTPUT [FILE]

Use FILE OUTPUT to print your drawing, either on your printer or
on the screen. When you choose FILE OUTPUT, a new menu will
appear:

File	Edit	Options
New	Add Name...	Screen...
Open...	Duplicate Name	Printer...
Close	Delete Name	Plotter...
Save		Camera Film...
Save As...		Camera Color...
Get Options...		
Save Options...		Make Default
Start Output...		
Quit		
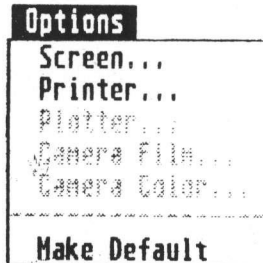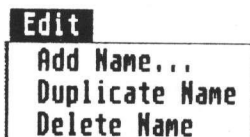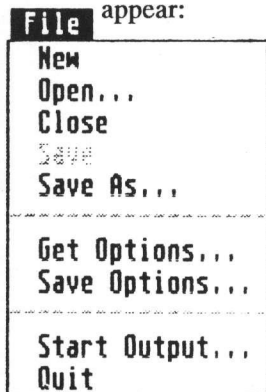
Note: Before you can print a drawing, you must have saved it.

To print your drawing:

Note: Single disk drive owners must place their drawing disk in
drive A before saving drawings. Dual drive owners should already
have their drawing disk in drive B.

[1] Choose OUTPUT from the File menu.

   The Output menu bar replaces the Easy-Draw menu bar,
   and the printing list dialog box appears.

[2]   Fill in the names of the drawings you want to print.

The list can contain from one drawing to thirty-six drawings.

Use the commands on the Edit menu to add names to the
list, delete names from the list, or clear the list to start a new
list.

[3]   Choose FILE START OUTPUT.

The START OUTPUT dialog box appears.

[4]   Click on the device you want to "print" on, and enter the
number of copies you want.

[5]   Click on OK to start printing.

Important: If you have only one disk drive, you must insert
your Easy-Draw Master Disk now before quitting from
OUTPUT.

[6]   When printing is finished, choose QUIT from Output's File
menu to return to Easy-Draw.

You have several options for controlling printing, including
printing to the screen. With screen printing, you can create a slide
show. You can control the time between pictures and can choose
to make the show repeat until you stop it. For details of setting
the screen printing options, see the chapter entitled "More About
Printing," which contains full descriptions of all the printing
features.

QUIT [FILE]

Use FILE QUIT to quit Easy-Draw. If a drawing or changes to an
existing drawing have not yet been saved, Easy-Draw asks you if
you want to save or discard them.

When Easy-Draw quits, you will return to the GEM desktop.

Page Menu

```
┌─────────────────────┐
│ Page                │
│   Size ...          │
│ ~~~~ Rulers ~~~~    │
│   Display ON   ⌘T   │
│ ~~~~ Grid ~~~~~~    │
│   Spacing ...       │
│   Display ON   ⌘G   │
│   Snap     ON  ⌘S   │
│─────────────────────│
│   Select All   ⌘A   │
│─────────────────────│
│   Erase All    ⌘E   │
└─────────────────────┘
```

SIZE [PAGE]

Use PAGE SIZE to choose the size of paper you want to draw and print on. The page size you select determines if you will work in inches or centimeters. Selecting a metric page size sets Easy-Draw to use metric grid size and rulers.

Note: If you like to draw on a metric grid but want to print drawings on imperial paper sizes, choose a metric page size for drawing then choose an imperial page size just before your final save.

You can also choose which direction you will be drawing and printing on the sheet.

```
┌──────────────────────────────────────────┐
│ ███████████                               │
│ █Page Size:█                  ┌──────────┐│
│ ███████████                   │√ Portrait││
│         ┌─────────────┐       └──────────┘│
│         │   INCHES    │                   │
│         └─────────────┘       ┌──────────┐│
│      ┌────────────────────┐   │Landscape ││
│      │√ 8.5 x 11  Letter  │   └──────────┘│
│      └────────────────────┘               │
│      ┌────────────────────┐               │
│      │ 8.0 x 13   Legal   │               │
│      └────────────────────┘               │
│      ┌────────────────────┐               │
│      │ 11.0 x 17  Double  │               │
│      └────────────────────┘               │
│         ┌─────────────┐                   │
│         │   METRIC    │                   │
│         └─────────────┘                   │
│      ┌────────────────────┐               │
│      │ 14.8 x 21.0        │               │
│      └────────────────────┘               │
│      ┌────────────────────┐   ┌──────────┐│
│      │ 21.0 x 29.7 Din A4 │   │   OK     ││
│      └────────────────────┘   └──────────┘│
│      ┌────────────────────┐   ┌──────────┐│
│      │ 29.7 x 42.0 Din A3 │   │ CANCEL   ││
│      └────────────────────┘   └──────────┘│
└──────────────────────────────────────────┘
```
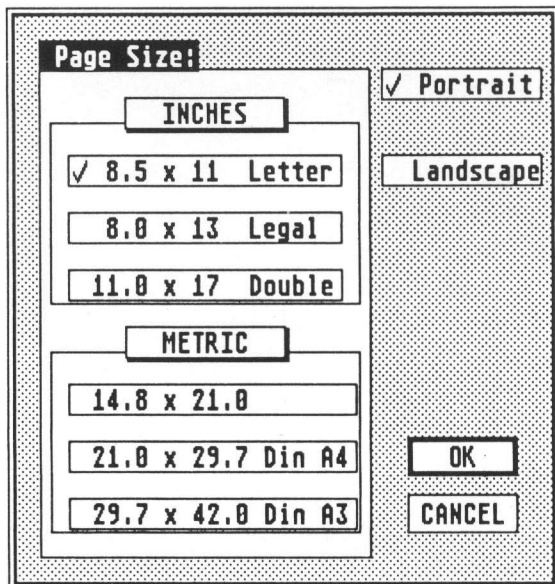
RULER DISPLAY ON/OFF [PAGE]   *T

Use PAGE RULER DISPLAY ON to turn on the ruler to see the size and position of objects in your drawing. The ruler shows the size of measurements you set using Page Ruler Spacing.

Use PAGE RULER DISPLAY OFF to turn off the ruler again.

GRID SPACING [PAGE]

Use PAGE GRID SPACING to set the measurements that will appear on the drawing surface. You can choose sizes shown in the following dialog boxes.

Ruler/Grid Settings: INCHES	
☐ 1/32	☐ 1/8
☐ 1/16	☑ 1/4
☐ 1/12	☐ 1/2
☐ 1/18	☐ 1

`OK` `CANCEL`

Ruler/Grid Settings: METRIC	
☐ 1 mm	☑ 1 cm
☐ 2 mm	☐ 2 cm
☐ 5 mm	☐ 3 cm

`OK` `CANCEL`

GRID DISPLAY ON/OFF [PAGE]   *G

Use PAGE GRID DISPLAY OFF to turn off the visual display of the drawing grid.

PAGE GRID DISPLAY ON turns the grid back on. With grid display on, dots appear in squares on the drawing surface. In zoom normal, dots will appear accurately spaced according to the setting selected.

Note: Grid spacings finer than $1/8^{th}$ of an inch should only be used when zoomed in closer than zoom normal.

GRID SNAP ON/OFF [PAGE]   *S

Use PAGE GRID SNAP ON to turn on grid snap, which is turned off when you buy Easy-Draw. Grid snap can help you align various parts of your drawing by moving the beginning and ending points of an object to one of the grid points. Grid snap has no effect when you draw freehand sketches.

Note: Resizing a grouped object with Grip Snap on using the EDIT SIZE option may result in objects that do not expand or shrink proportionally. To assure proportional resizing with the EDIT SIZE option, turn off grid snap.

When you turn off Grid Snap, the beginning and ending points can be anywhere on the drawing surface, but alignment can be more difficult. The various Align commands will help you align any objects that must be aligned in your drawing.

Use PAGE GRID SNAP OFF to turn off grid snap again.

SELECT ALL [PAGE]   *A

Use EDIT SELECT ALL to select every object in a drawing all at once.

ERASE ALL [PAGE]   *E

Use PAGE ERASE ALL to erase everything from the drawing surface; gives you a clean sheet without saving anything currently on the drawing surface.

Zoom Menu

```
 Zoom
 Area
 Normal      ⌘N
 Full Page
 Last        ⌘L
```
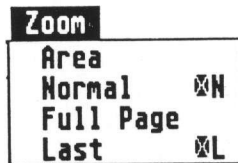
AREA [ZOOM]

Use ZOOM AREA to select the part of the drawing you want to expand to fill the whole window.

To zoom an area:

[1]   Choose the AREA command, then move the mouse pointer onto your drawing.

[2]   Hold down the left mouse button starting at the upper left corner of the area you want to zoom.

[3]   Move the mouse until the rubber band box encloses the area you want to zoom.

[4]   Release the left mouse button to zoom the selected area to window size.

The shortest side of the rubber band box will expand to the full window size in that direction. For example:
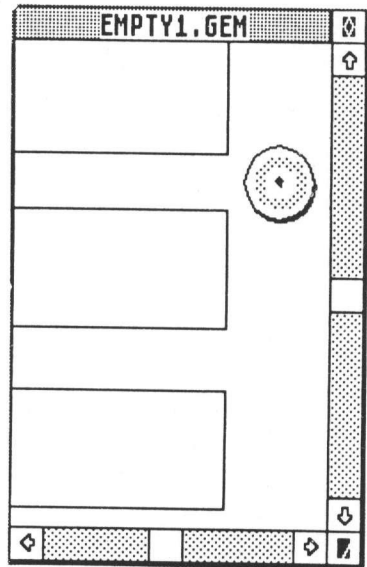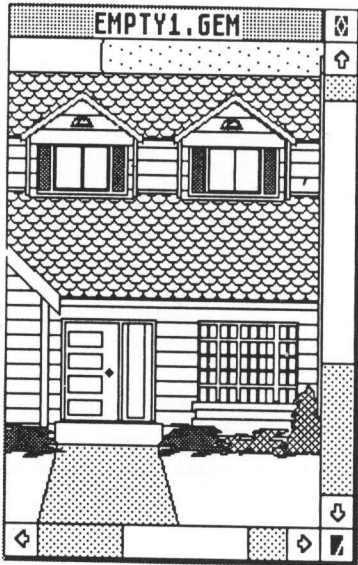
The opposite dimension of the rubber band box may be expanded greater than the size of the window in that direction.

Note that the amount of zoom is controlled by the size of the rubber band box you draw; the smaller the box, the closer in you zoom.

To return the drawing to normal size, choose ZOOM NORMAL.

To return to the view you had just prior to using ZOOM AREA, choose ZOOM LAST.

Note: You can create or edit text objects only in zoom normal.

NORMAL [ZOOM]   *N

Use ZOOM NORMAL to return to the normal size of your drawing after having chosen either ZOOM FULL PAGE or ZOOM AREA.

Normal size means the size the objects will be shown and printed (actual size).

FULL PAGE [ZOOM]

Use ZOOM FULL PAGE to see how your drawing is positioned on the sheet. When you choose FULL PAGE, Easy-Draw draws a miniature picture of a sheet of paper with your drawing sketched on it. This picture only approximates how your drawing will fit on the sheet when it is printed. Details and clarity are sacrificed to show approximate positioning.

FULL PAGE will appear gray on the Zoom menu while your drawing is zoomed to full page. Choose ZOOM NORMAL to see your drawing at its normal size and to add objects to it.

Note: You can create or edit text objects only in Zoom Normal.

LAST [ZOOM]   *L

Use ZOOM LAST to return to the zoom view you had of your drawing just before using the most recent Zoom command.

ZOOM LAST lets you switch between two magnifications (zoom levels) of your drawing.

Edit Menu

```
┌─Edit─────────────┐
│  Delete          │
│  Undelete        │
│~~~~ Modify ~~~~   │
│  Copy        ⌘C   │
│  Flip        ⌘F   │
│  Mirror      ⌘M   │
│  Rotate      ⌘R   │
│  Open/Close  ⌘O   │
│~~~~ Modes ~~~~~   │
│  Size        ⌘Z   │
│√ Stretch     ⌘X   │
│~~~~ Edit ~~~~~    │
│  Arc / Pie       │
│  Polyline        │
│  Text            │
└──────────────────┘
```

DELETE [EDIT]   DEL

Use EDIT DELETE to remove an object or an area of a drawing.
This command does the same action as dragging an object to the
Trash can.

To delete something from a drawing:

[1]   Select the object or an area of the drawing
[2]   Choose EDIT DELETE

You can reverse the deletion by choosing EDIT UNDELETE.

UNDELETE [EDIT]   UNDO

Use EDIT UNDELETE to reverse the effect of the Delete com-
mand or to return an object from the Trash to the drawing sur-
face. The object returns to the upper left corner of the active
drawing.

Copy [Edit]   *C

Use EDIT COPY to get a copy of existing objects.

To copy an existing object:

[1]   Select an object or an area of the drawing

[2]   Choose EDIT COPY

COPY will appear gray on the Edit menu if nothing is selected.

If you are in drawing mode, this command will automatically put you in point mode.

[3]   Point to the copy, hold down the left mouse button, and move the copy where you want it

[4]   Release the left mouse button to paste down the copy

Flip [Edit]   *F

Use EDIT FLIP to flip over the selected objects, either to the side or up and down.

[1]   Select the objects you want to flip.

[2]   Choose EDIT FLIP.

The EDIT FLIP pop-up menu appears:

```
| Left   |
| Right  |
| Up     |
| Down   |
| CANCEL |
```

[3]   Choose the flip direction, Left/Right or Up/Down.

The objects flip around their center, staying in the same place on the drawing surface.

Mirror [Edit]   *M

Use EDIT MIRROR to create a mirror image object of the same size and shape next to the selected object. With EDIT MIRROR, you can quickly build tiles and other symmetrical shapes. Or, if you know the object you are drawing is symmetrical, you need to draw only half, or perhaps only a quarter, of it, which will save you half the drawing work.

[1]   Select the objects you want mirror images of.

[2]   Choose EDIT MIRROR.

       The EDIT MIRROR pop-up menu appears:

Left/Right
Up/Down
CANCEL

[3]   Choose the mirror direction, Left, Right, Up, or Down.

       Easy-Draw creates an object of the same shape and size but
       a mirror image of the original. The new object and its origi-
       nal touch along the side you chose in the pop-up menu.

ROTATE [EDIT]   *R

Use EDIT ROTATE to rotate the selected object or area of the
drawing 90 degrees counterclockwise (to the left).

Important: If you want to rotate several objects at once and
maintain their orientation to each other, then make sure they are
grouped into a single object first.

To rotate an object or area:

[1]   Select the object or area.

[2]   Choose ROTATE from the Edit menu.

       ROTATE will appear gray on the Edit menu if nothing is
       selected.

You may use this command repeatedly on the selected object or
area.

Note: Text does **not** rotate.

Original   Rotated
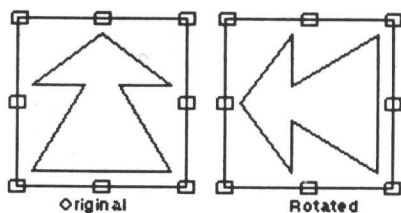
OPEN/CLOSE [EDIT]   *O

Use EDIT OPEN/CLOSE when you want to change the open/close status of a polyline or sketch object

If a polyline or sketch object is open, it will become closed.

If a polyline or sketch object is closed, it will become open.

Before   After   Before   After
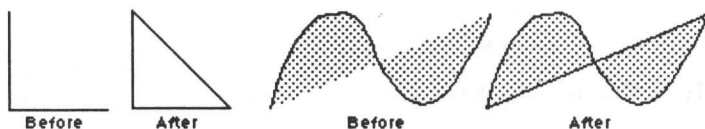
SIZE [EDIT]   *Z

Use EDIT SIZE to change the effect of the sizing markers on an object from Stretch (see STRETCH command). When EDIT SIZE is on, there are only four sizing markers on the object box around the selected object. Moving a sizing marker enlarges or shrinks the whole object in all directions and dimensions proportionally, from the current center.

Note: If grid snap is on, the object may not expand or shrink proportionally nor hold the position of the center. To assure proportional resizing and current center position, turn off grid snap.

Compare with EDIT STRETCH, which resizes objects in the directions and dimensions that you move a particular sizing marker.
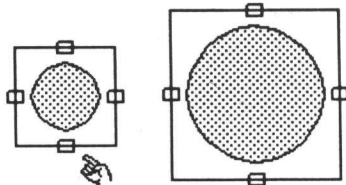
STRETCH [EDIT]   *X

Use EDIT STRETCH to change the effect of the sizing markers on an object from SIZE (see SIZE command). When EDIT STRETCH is on, there are eight sizing markers on the object box around the selected object. Moving a sizing marker enlarges or shrinks the object in that direction and dimension. The center of the object slides in the direction of the enlargement or shrinkage.

Compare with EDIT SIZE, which resizes whole objects proportionally.
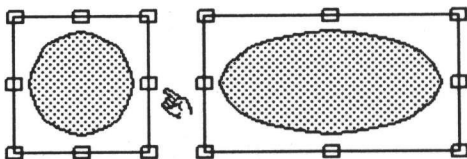
ARC/PIE [EDIT]

Use Edit Arc/Pie to change the angle between the two legs of a wedge or an arc after the object has been pasted down.

Notice that the Edit menu name stays black to indicate that you are in an editing mode. Also, a panel appears at the top of the screen that constantly displays the beginning and ending angles as well as the percentage of the arc.

To change the angle, follow these directions:

[1]   Select the wedge or arc.
[2]   Choose PIE/ARC.
[3]   Select the object again.
[4]   Change the angle with the arrow keys:

The right and left arrow keys move the upper leg (or end) by 5 degrees.

The up and down arrow keys move the lower leg (or end) by 5 degrees.

Hold down the Shift key and press the arrow keys to move the legs (or ends) by 1/2 degrees.

Note: These keys also adjust the legs (or ends) while you are drawing a new wedge or arc.

POLYLINE [EDIT]

Use EDIT POLYLINE to change the shape and size of part of a polyline or sketch object, to smooth areas of a sketch object, and to break a polyline into smaller pieces.

[1]   Select a polyline or sketch object.
[2]   Choose EDIT POLYLINE.

Notice that the Edit menu name stays black to indicate that you are in an editing mode. Also, a panel appears at the top of the screen that tells you about the F1 and F10 keys (see below).

A marker appears at the nearest point on the polyline. You can use this point or select any other point on the polyline by pointing with the mouse and clicking the mouse button, or by pressing the arrow keys, which cycle through the points if the object is closed (if the object is open, the selection of points stops at each end of the object).

[3]   Point inside the point marker, press the left mouse button,
       and drag the point to resize and reshape the object.

       Press Delete key to delete a point.
       Press Insert key to insert a point. A dialog box will appear to
       ask you Before or After the current point. "Before" means to
       the left and above the current point. "After" means to the
       right and below the current point.
       Press Undo key to reverse your last editing action (move, in-
       sert, or delete).
       Press F1 to open or close the object.
       Press F10 to break the object into two objects. Both will be
       selected, but they exist as separate objects. Both objects will
       be open after splitting.

TEXT [EDIT]

Use EDIT TEXT to change the contents of a text box. Once you've
selected the text box, choose EDIT TEXT, then select the text box
again. Easy-Draw puts a cursor in the upper left corner of the text
box so you can edit the text.

Notice that the Edit menu name stays black to indicate that you
are in an editing mode. Also, a panel appears at the top of the
screen that tells you about the F1, F2, and F10 keys (see below).

The arrow keys move the cursor up, down, right, and left. You
can position the cursor with the mouse by pointing and clicking
the left mouse button. If you hold the left button down, the open
hand pointer appears so that you can move the text box. After you
move the text box, the cursor appears in the upper left corner of
the text box.

Note: The default text format is justified. Press Return key when
you do not want a line justified; for example, at the end of a
paragraph or for blank lines between paragraphs.

You can use the following keys to edit text:

Key	Action
Arrow keys	Move cursor up, down, right, and left
Home	Moves cursor to upper left corner of text box
Backspace	Erases to the left
Delete	Erases the character to the right of the cursor
Shift-Delete	Erases to the end of the line
Clear (Shift-Home)	Erases entire text block
Return	Starts a new line and prevents justification
Esc	Reformats the text
F1	Loads an ASCII file into current text block. If you load a word processing file that contains special characters (e.g., for formatting), Easy-Draw will substitute spaces. To avoid this, save your text files in ASCII file format rather than in word processing format.
F2	Switches between justified and non-justified text.
F10	Breaks text block at the cursor position and puts remaining text into a new text block below the original.

In addition, you can use the mouse during text editing. Position the mouse pointer and click the left mouse button to position the cursor. Press the right mouse button to end text editing and reformat the text.

Arrange Menu

```
┌─────────────────────┐
│ Arrange             │
├─────────────────────┤
│ Put in Front        │
│ Put in Back         │
│ ~~~~ Group ~~~~      │
│ Create        ⊠+    │
│ Explode       ⊠-    │
│ ~~~~ Align ~~~~      │
│ Left                │
│      Center         │
│            Right    │
│ Top                 │
│ Middle              │
│ Bottom              │
│ ~~~ Spacing ~~~      │
│ Center of Page      │
│ Even Distance       │
└─────────────────────┘
```

PUT IN FRONT [ARRANGE]

Use ARRANGE PUT IN FRONT to place the selected object or area in front of all parts of the drawing that overlap or underlap it.
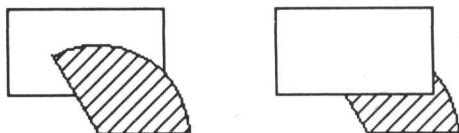
PUT IN BACK [ARRANGE]

Use ARRANGE PUT IN BACK to place the selected object or area behind all parts of the drawing that overlap or underlap it.

CREATE GROUP [ARRANGE]   *+

Use CREATE GROUP to group all objects in a selected area of a drawing as a single unit.

To create a group:

[1] Select the area with the objects you want to group.

[2] Choose CREATE GROUP from the Arrange menu.

CREATE GROUP will appear gray on the Arrange menu if nothing is selected.

After you group part of a drawing, all the pieces become essentially a single piece, as if drawn as one object. You can also group two or more groups. Choose EXPLODE GROUP to reverse the CREATE GROUP command.

EXPLODE GROUP [ARRANGE]   *-

Use EXPLODE GROUP to release the parts of a group joined together with ARRANGE CREATE GROUP.

To explode a group:

[1] Select the group object.

EXPLODE GROUP will appear gray on the Arrange menu if nothing is selected.

[2] Choose EXPLODE GROUP from the Arrange menu.

After you choose EXPLODE GROUP, you can work with the individual pieces of the former group.

ALIGN LEFT [ARRANGE]

Use ALIGN LEFT to align all objects within the selected area with the left side of the object that is farthest to the left.

Note: All of the Align commands (except CENTER OF PAGE) require that two or more objects are selected.

ALIGN CENTER [ARRANGE]

Use ALIGN CENTER to place all objects within the selected area at the horizontal center between the left side of the object that is farthest to the left and the right side of the object that is farthest to the right.

ALIGN CENTER does not affect the vertical placement of objects. See ALIGN MIDDLE to adjust vertical placement to the vertical center.

ALIGN RIGHT [ARRANGE]

Use ALIGN RIGHT to align all objects within the selected area with the right side of the object that is farthest to the right.

ALIGN TOP [ARRANGE]

Use ALIGN TOP to align all objects within the selected area with the top side of the object that is farthest up.

ALIGN MIDDLE [ARRANGE]

Use ALIGN MIDDLE to place all objects within the selected area at the vertical center between the top side of the object that is farthest up and the bottom side of the object that is farthest down.

ALIGN MIDDLE does not affect horizontal placement of objects. See ALIGN CENTER to adjust horizontal placement to the horizontal center.

ALIGN BOTTOM [ARRANGE]

Use ALIGN BOTTOM to align all objects within the selected area with the bottom of the object that is farthest down.

CENTER OF PAGE SPACING [ARRANGE]

Use SPACING CENTER OF PAGE to move the selected object(s) to either the horizontal or vertical center of the page. After you choose CENTER OF PAGE, the following secondary pop-up menu appears:

```
┌─────────────────┐
│   Horizontal    │
├─────────────────┤
│    Vertical     │
├─────────────────┤
│     CANCEL      │
└─────────────────┘
```

EVEN DISTANCE SPACING [ARRANGE]

Use ARRANGE EVEN DISTANCE to space equally several selected objects. This command requires that more than one object be selected. After you choose EVEN DISTANCE, the following secondary pop-up menu appears:

```
┌─────────────────┐
│   Horizontal    │
├─────────────────┤
│    Vertical     │
├─────────────────┤
│     CANCEL      │
└─────────────────┘
```

Text Menu

```
┌──────────────────┐
│ Text             │
├──────────────────┤
│ ✓ Normal         │
│   Bold           │
│   Light          │
│   Italic         │
│   Outlined       │
│   Underlined     │
│   Justify        │
│ ~~~ Size ~~~     │
│     7 Pt         │
│ ✓ 10 Pt 1/8"     │
│    14 Pt         │
│    18 Pt 1/4"    │
│    28 Pt         │
│    36 Pt 1/2"    │
│ ~~~ Fonts ~~~    │
│   Styles...      │
└──────────────────┘
```
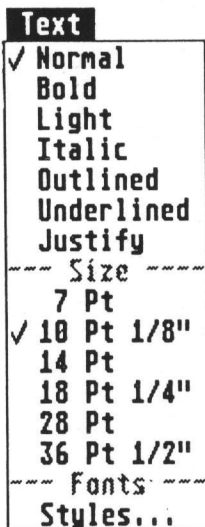
NORMAL [TEXT]

Use TEXT NORMAL to make all selected and subsequent text appear without any of the choices on the Text menu (turns off at once all choices that are on) so that you don't have to choose each one individually to turn it off.

BOLD [TEXT]

Use TEXT BOLD to make selected and subsequent text appear bold face. Choose TEXT BOLD again to turn off bold face. Choose TEXT NORMAL to turn off all choices for text.

LIGHT [TEXT]

Use TEXT LIGHT to make selected and subsequent text appear light. Choose TEXT LIGHT again to turn off light text. Choose TEXT NORMAL to turn off all choices for text.

ITALIC [TEXT]

Use TEXT ITALIC to make selected and subsequent text appear italicized (slanted). Choose TEXT ITALIC again to turn off italics. Choose TEXT NORMAL to turn off all choices for text.

OUTLINE [TEXT]

Use TEXT OUTLINE to make selected and subsequent text appear with outlines around the letters and numbers. Choose TEXT OUTLINE again to turn off outlined text. Choose TEXT NORMAL to turn off all choices for text.

UNDERLINED [TEXT]

Use TEXT UNDERLINED to make selected and subsequent text appear underlined. Choose TEXT UNDERLINED again to turn off underlining. Choose TEXT NORMAL to turn off all choices for text.

JUSTIFY [TEXT]

Use TEXT JUSTIFY to right align the text within the text box. Spaces are added between the words to fill out the lines so that each line stretches from one side of the text box to the other. If you press the Return key, that line will not be justified.

If you select two or more text boxes then choose TEXT JUSTIFY, the justify status of each text box changes. If text is not justified, it becomes justified; if text is justified, it becomes unjustified.

HEIGHT [TEXT]

Use TEXT HEIGHT to chose a size for selected and subsequent text. The size of text is measured by a system called points. The numbers in the Text Settings dialog box represent point sizes for letters. Points are a measurement used by printers and typesetters. There are 72 points per inch. Thirty-six points equals one-half inch. A point size of 10 points generally produces eight lines per inch. Ten points is the size of elite typewriter type.

Seven point text will print out fine on supported laser printers or 24-pin printers but may not have enough resolution on 9-pin dot matrix printers to produce the desired quality.

STYLES [TEXT]

Use TEXT STYLES to choose a text style (font) from as many as five styles. Your choice affects selected and subsequent text.
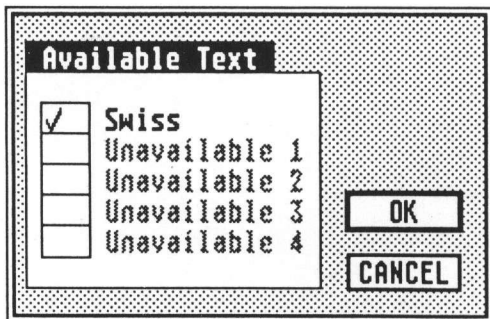
You will always have the default style, which is provided with Easy-Draw. As other fonts are made available and installed on you Easy-Draw Master disk, they will be loaded, and the names will be shown. If no other fonts are available, Easy-Draw show "UNAVAILABLE 1-4" in gray.

Line Menu

Use the Line menu to choose:

* Type of line you want to draw. For solid lines, you also have the choice from several line widths. The patterned lines are all thin lines. You can also choose None to draw objects without borders. If you also have no pattern, then the object will be invisible.

* Shape of the ends of lines; you can choose a type for each end of a line; the left column is for the beginning of the line (where you started drawing the line); the right column is for the end of the line.
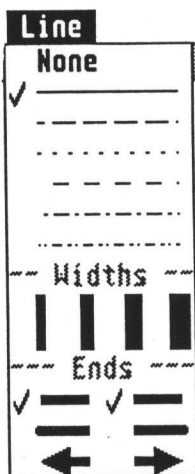
Pattern Menu

STYLES [PATTERN]

Use PATTERN STYLES to choose:

* Which pattern you want to fill the currently selected part of the drawing.
* Which pattern you want to fill the next solid object you draw.
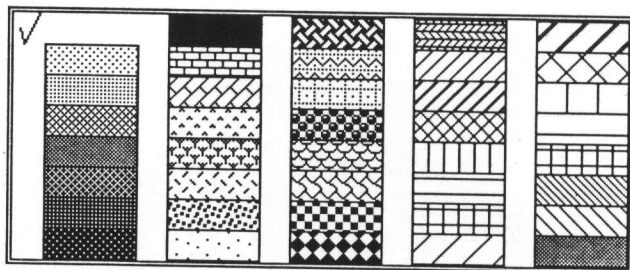
To create your own pattern, choose USER PATTERN on the Pattern menu.

TRANSPARENT [PATTERN]

Use PATTERN TRANSPARENT when you want selected objects to be "see through" so that they let objects behind them show through.

Use PATTERN TRANSPARENT a second time when you want the objects to be opaque and to hide parts of other objects that are behind them.

If you select two or more objects then chose PATTERN
TRANSPARENT, the transparent status of each object changes. If
an object was transparent, it becomes opaque; if an object was
opaque, it becomes transparent.

SHADOW [PATTERN]

Use PATTERN SHADOW to add or remove shadows on the se-
lected objects. Shadows give objects a three-dimensional look.

You must choose PATTERN SHADOW after an object is drawn.
PATTERN SHADOW does not automatically apply to objects you
draw subsequently.

Shadows always show on the bottom and right side of the object.

To add or remove a shadow on an object:

[1]   Select the object.
[2]   Choose Edit Shadow.

Note: If you select two or more objects then choose PATTERN
SHADOW, the objects change their shadow status. If an object had
a shadow, it loses it; if an object had no shadow, it gets one.

USER PATTERN [PATTERN]

Use USER PATTERN to create your own pattern. You can imitate
an existing pattern, then alter it, or you can create a wholly new
pattern.
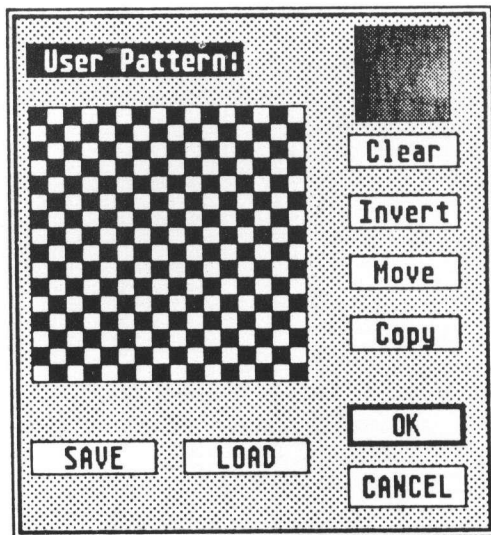
See the chapter entitled "Working on Patterns" for directions for creating your own pattern.

LOAD USER PATTERN [PATTERN]

Use LOAD USER PATTERN to retrieve a pattern you created and saved previously with the USER PATTERN command. Easy-Draw asks you for the name of the file you saved your pattern in. After you load the pattern, you can modify it for use during this session, then discard the modifications or save them for future use.

SAVE USER PATTERN [PATTERN]

Use SAVE USER PATTERN to save the pattern you create with the USER PATTERN command. By saving the pattern, you can use it again the next time you start Easy-Draw. If you do not save the pattern, it is discarded when you quit Easy-Draw.

Easy-Draw adds the characters .PAT to the end of each pattern file name.

Color Menu

```
┌─────────────┐
│ Color       │
├─────────────┤
│     0       8 │
│ ✓   1       9 │
│     2   🐭  A │
│     3       B │
│     4       C │
│     5       D │
│     6       E │
│     7       F │
├─────────────┤
│  Settings... │
└─────────────┘
```
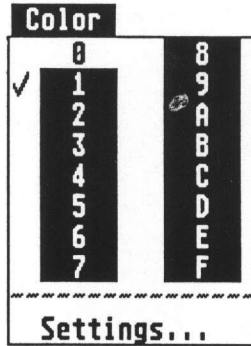
Use the color swatches to choose a color for all lines, patterns
(fill), and text. Only as many colors appear as your computer can
draw.

To choose individual colors for lines, patterns, or text, use COLOR
SETTINGS.

You can adjust the available colors through the Control Panel.
See the chapter entitled "Setting Colors" for the techniques for
adjusting the available colors.

SETTINGS [COLOR]

Use COLOR SETTINGS to choose individual colors for lines, pat-
terns (fill), and text. The numbers on the main Color menu set
the color for all three at once.

```
┌─────────────────────────────────────┐
│ ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓ │
│ ┌─────────────────────────────────┐ │
│ │ Color Settings:                 │ │
│ │  ┌──────────────────────────────┐│ │
│ │  │ Line:   ◁ 0 1 2 3 ▷    1    ││ │
│ │  │ Fill:   ◁ 0 1 2 3 ▷    1    ││ │
│ │  │ Text:   ◁ 0 1 2 3 ▷    1    ││ │
│ │  └──────────────────────────────┘│ │
│ │         ┌────────┐  ┌────────┐   │ │
│ │         │   OK   │  │ CANCEL │   │ │
│ │         └────────┘  └────────┘   │ │
│ └─────────────────────────────────┘ │
└─────────────────────────────────────┘
```
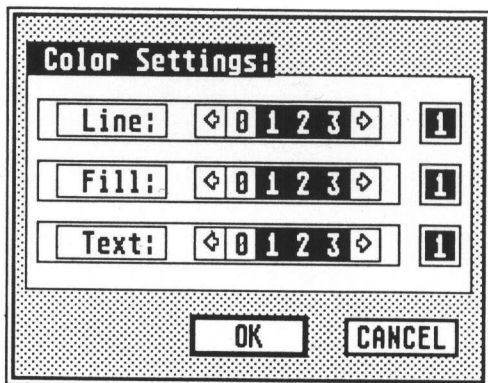
To choose a color, click on the number for the color you want.
Use the arrows to reveal color numbers not in view. You will have
four colors displayed using medium resolution color.

Easy-Draw Screen

The Easy-Draw Screen showing the menu bar with Desk, File, Page, Zoom, Edit, Arrange, Text, Line, Pattern, and Color menus; the EMPTY1.GEM window with labels for Title Bar, Drawing Title, Full Box, Scroll Arrow, Clipboard, Slider, Trashcan, Pointer Curser, Scroll Bar, Scroll Arrow, Slider, and Window Size Box.
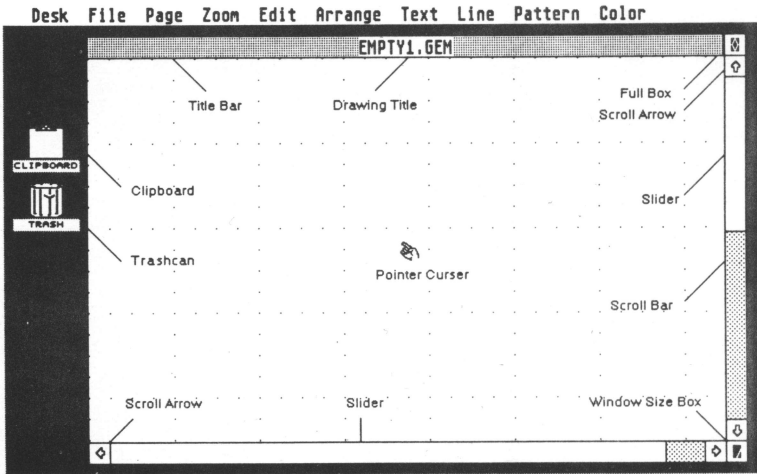
See the chapter entitled "The Menu Commands" for pictures of the menus and dialog boxes.

Techniques

The techniques are listed in alphabetical order. Following the techniques you'll find a list of hints for applying some of the techniques.

Adjusting the Grid

* Grid display: Choose PAGE GRID DISPLAY ON/OFF.

* Grid snap: Choose PAGE GRID SNAP ON/OFF.

* Grid spacing:
    Choose PAGE GRID SPACING.
    Choose grid spacing.
    Click OK.

Adjusting Wedges and Arcs

* New objects:
    During creation, press left or right arrow keys to move upper leg (upper end) by five degrees.
    Press up or down arrow keys to move lower leg (lower end) by five degrees.
    Hold down Shift key and press the arrow keys to move the legs (or ends) by 1/2 degrees.
* Existing objects:
    When wedge or arc is one of the currently selected objects, choose EDIT CHANGE ARC.
    Select wedge or arc to edit.
    Press arrow keys as described for new objects to adjust the angle of the legs (or ends).

Aligning Objects

* New objects:
    Turn on Grid Snap and Grid Display.
    Place objects on grid points that are aligned.
* Existing objects:
    Select the area containing the objects.
    Choose the ARRANGE ALIGN command that suits your purpose.

Canceling a Command

To cancel out of all drawing commands (box, line, and so on),
editing of arcs, text, and polylines, moving of objects, and sizing or
stretching of objects:
> Hold down the left mouse button.
> Press the right mouse button, so both buttons are down.
> Then, release both buttons at the same time.

Changing Line Width and Style

Note: Line width and style apply to all objects except text.

* New object:
> Point to the desired line example on the Line menu.
> Click the left mouse button.
> Draw the object.

* Existing object:
> Select the object.
> Point to the desired line example on the Line menu.
> Click the left mouse button.

Changing to Point Mode

* After completing a drawing mode command:
> Press the left mouse button while pointing to the desktop
> area

-- or --

> Press the right mouse button while the drawing Pop-up
> menu is displayed.

-- or --

> Choose EDIT SIZE or EDIT STRETCH
> Several other menu commands will also automatically put
> you into point mode; such as PAGE SELECT ALL and EDIT
> COPY.

Choosing Menus, Commands, and Dialog Box Choices

Note: You can choose menus, commands, and dialog box
choices whether you're in drawing or point mode (the mouse
pointer can be either cross hair or finger). The menus are not ac-
tive, however, while you are in the middle of a drawing command.

* Menus: Point to the menu name.
* Commands:
  . Choose the menu.
  Point to the command name.
  Click the left mouse button.
* Dialog box choices:
  Point to your choice.
  Click the left mouse button.

Coloring Objects

* New object:
  Point to the desired color sample on the Color menu.
  Click the left mouse button.
  Draw the object.

Note: This technique chooses one color for lines, patterns, and text. To choose a color for only one of the types of objects, choose COLOR SETTINGS, then choose the desired color for the type of object.

* Existing object:
  Select the object.
  Point to the desired color sample on the Color menu.
  Click the left mouse button.

Note: This technique also chooses the color for subsequent new objects.

Copying Objects

* One object:
  Select the object.
  Choose EDIT COPY.
  Move the copy where you want it.
* Two or more:
  Select the area containing the objects.
  Choose EDIT COPY.
  Move one of the objects to the new position. The rest will
  follow when you paste the first one down.

Note: Copies are displayed 1/2" to the right and down visually, no matter what zoom you are currently using.

Creating Your Own User Pattern

Choose USER PATTERN from the Pattern menu.
Click the left mouse button to insert dots.
Click the right mouse button to erase dots.
Hold down both mouse buttons to insert checkerboard.
Click Clear to erase all dots.
Click Invert to reverse dots and white.
Click Move or Copy to move or copy part of a pattern to another part of the grid, size the rubber band box, move the rubber band box to the area to move or copy, (resize rubber band box if necessary by holding down the left mouse button), click right mouse button to select area, move rubber band box to new location, click right mouse button to paste down.
Click OK.

Note: The pattern will appear in the "User" slot in the PATTERN STYLES dialog box.

Note: Click Save to keep pattern for future Easy-Draw sessions.

Displaying the Ruler

*   Ruler display: Choose PAGE RULER DISPLAY ON/OFF.

Drawing Objects

*   To draw:

Click right mouse button to bring up the Pop-Up menu of drawing tools.
Point to the desired drawing tool.
Click the left mouse button.
Move cross hair pointer to desired starting point.
Hold down the left mouse button and move mouse to draw object.
Release left mouse button and move mouse to position object.
If necessary, hold down left mouse button again to adjust size and direction of object.
Click right mouse button to paste down object.

*   To cancel:

Hold down left mouse button.
Press right mouse button.
Release both mouse buttons together.

Editing Text

* To start:
  Select the text object.
  Choose EDIT TEXT from the Edit menu.
  Select the text object again.
* Moving in text box:
  Press the arrow keys to move the cursor up, down, right, and left.
  Press Home to move the cursor to upper left corner of text box.

  -- or --

  Position the mouse pointer and click the left mouse button.
* Adding text:
  Position cursor.
  Type new text.
* Erasing text:
  Backspace to erase to the left of the cursor.
  Delete to erase to the right of the cursor.
  Shift-Delete to erase to the end of the line.
  Clear (Shift-Home) to erase entire text block.

* Reformatting:
  Press Esc.

  -- or --

  Click on a sizing marker.

  -- or --

  Wait a couple of seconds for automatic reformatting
* Stop editing:
  Click right mouse button (also reformats text box).
* Load an ASCII file
  Press F1 to load an ASCII file into the current text block.
* Press F2 to toggle right justify on/off.
* Breaking text blocks
  Press F10 to break a text block at the cursor position. The remaining text splits off into a new text block below the original. You are placed in edit mode in the new text block.

Erasing/Deleting Objects

* To delete:

> Select the object.
> Choose EDIT DELETE.

> -- or --

> Move object to Trash can.

* To reverse deletion: Choose EDIT UNDELETE.

> Objects appear in upper left corner of active window.

* To empty Trash can:
> Choose Desk EASY-DRAW INFO.
> Click on DT.

Note: Emptying Trash can cannot be reversed.

* Save for later:

> Select the object.
> Move object to Clipboard.

Filling Objects with a Pattern

* New object:

> Choose PATTERN STYLES.
> Point to the desired pattern.
> Click the left mouse button.
> Draw the object.

* Existing object:

> Select the object.
> Choose PATTERN STYLES.
> Point to the desired pattern.
> Click the left mouse button.

Note: This technique also chooses the pattern for subsequent new objects.

Grouping Objects and Exploding a Group

* To group:

> Select the area containing objects.
> Choose ARRANGE CREATE GROUP.

* To explode:

> Select the group.
> Choose ARRANGE EXPLODE GROUP.

Inserting Text

* To start:
    Click right mouse button to bring up Pop-Up menu.
    Point to Text.
    Click left mouse button.
    Point where you want text to begin.
    Draw rubber band box.
    Click right mouse button.
    Type text.

-- or --

    Press F1 to load an ASCII file into the current text block.
       For help, see "Using File Selector Box" in "Hints."
    Press F2 to toggle justify.
    Press F10 to break a text block at the cursor position.
    The remaining text splits off into a new text block below the
       original. You are placed in edit mode in the new text block.
    Press the arrow keys to move the cursor up, down, right, and
       left.
    Press Home to move the cursor to upper left corner of text
       box.

-- or --

    Position the mouse pointer and click the left mouse button.

    Hint: If you want to add large blocks of text to a drawing,
    create the text in a word processor or text editor, save the
    text in ASCII format, then load the text block with F1 key.

    When you use F1 key to load a text block that is bigger than
    the text box, Easy-Draw loads all the text that will fit in
    memory. You can then stretch the text box to see the rest of
    the text. Use F1 with F10 to quickly layout an entire page.
    See the "Sample Drawings" section for an example.

* To stop: Click right mouse button.

* To cancel:
    Hold down left mouse button.
    Press right mouse button.
    Release both mouse buttons together.

This is an example of
Justified text which fills the
inside of the text box.

This is an example of
Justified text which fills the
inside of the text box.

During Creation

Complete

Text Cursor
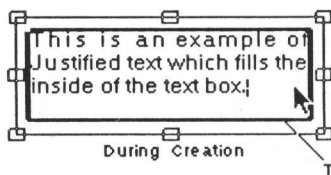
Merging Drawings

Choose FILE REPLACE.

Click MERGE in the Pop-up menu

Choose or type the name of the next drawing in the File
Selector box. If you want to start a new drawing, type a new
name.

Click OK.

If the window contains a new drawing or a changed draw-
ing, Easy-Draw asks if you want to save or discard it.

Moving Objects

* During drawing:

    Release both mouse buttons when you've finished drawing
    object.

    Move mouse.

* New text object:

    While typing or editing text, move text box by holding down
    left mouse button until open hand pointer appears, then
    moving mouse to position text box.

* Existing object:

    Make sure you are in point mode.

    Select the object.

    Point into the object.

    Hold down the left mouse button.

    Move mouse to move object to new location.

    Release left mouse button to drop object.

Note: If you have more than one object selected, you'll see a box
with an X in it over the pilot object which moves for the purpose
of establishing the new location. At the same time, all the selected
objects will be surrounded by a thin box.

Opening and Closing a Second Drawing Window

* To open:

    Choose FILE OPEN #2.

    Click OK.

* To close:

    Choose FILE CLOSE #2.

    If second window contains a new drawing or a changed
    drawing, Easy-Draw asks if you want to save or discard it.

Printing Drawings

Store (save) the drawings.
Choose FILE OUTPUT.
Choose EDIT ADD NAME.
Type or choose the name of the drawings.
Choose FILE START OUTPUT.
Click on PRINTER.
Click on OK
When printing is finished, choose FILE QUIT.

Putting Objects in Front or in Back

* Put in back:

Select the object.
Choose ARRANGE PUT IN BACK.

* Put in front:

Select the object.
Choose ARRANGE PUT IN FRONT.

Note: See "Hints" for clever uses of the PUT commands.

Quitting Easy-Draw

Choose FILE QUIT.
If the window contains a new drawing or a changed drawing, Easy-Draw asks if you want to save or discard the current drawing.

Replacing the Drawing in a Window

Choose FILE REPLACE.
Click Replace in the Pop-up menu
Choose or type the name of the next drawing in the File Selector box. If you want to start a new drawing, type a new name.
Click OK.
If the window contains a new drawing or a changed drawing, Easy-Draw asks if you want to save or discard it.

Rotating Objects

Select the object.
Choose EDIT ROTATE to rotate object 90 degrees counterclockwise.

Scrolling Drawings

*   Short scroll:

    Click an arrow in scroll bar to move drawing one grid line.

*   Long scroll:

    Point to the gray area in the scroll bar next to the slider, then click the left mouse button. The drawing scrolls the height or width of one window.

    -- or --

    Move slider in scroll bar to move drawing by width or height of screen. Moving a slider uses the same technique as moving an object.

Selecting/Deselecting Objects

Before selecting an object, the mouse pointer must be the finger pointer. If the pointer is the cross hair pointer and you are not in the middle of a drawing command, press the left mouse button while over the desktop.

*   One or a group:

    Point inside object or group.
    Click left mouse button. Object box and sizing markers appear.

*   Two or more:

    Hold down left mouse button.
    Draw box around objects.
    Release left mouse button. All objects totally inside area have object boxes and sizing markers.

    -- or --

    Hold down Shift key, point inside another object or group, and press left mouse button. Object box and sizing markers appear.

*   To unselect all:

    Point to drawing surface or desktop where there are no objects, then click the left mouse button.

Shadowing Objects: 3-D Look

*   To add or remove shadow:

    Select the object.
    Choose EDIT SHADOW.

Sizing Objects

* SIZE MODE on:

    Select the object.
    Point to one of the four sizing markers (all four do the same
        thing).
    Hold down left mouse button.
    Move marker in direction of size change:
        Away from center for larger.
        Toward center for smaller.
    Release left mouse button when object is the size you want
        it.

Note: Object changes size proportionally so that it holds its
original shape and center point.

Stretching Objects

* STRETCH MODE on:

    Select the object.
    Point to one of the eight sizing markers; each stretches or
        shrinks differently:
        Top middle for top edge
        Bottom middle for bottom edge
        Left middle for left edge
        Right middle for right edge
        Upper left corner for top and left edges at same time
        Upper right corner for top and right edges at same time
        Lower left corner for bottom and left edges at same time
        Left right corner for bottom and right edges at same time.
    Hold down left mouse button and move mouse in directions
        desired.
    Release left mouse button when the object is the size and
        shape you want it.

Note: Object changes both size and shape; the center point
slides in the direction of the change.

Starting Easy-Draw

* From a floppy disk:

    Insert the Easy-Draw Master Disk in drive A.
    Turn on your Atari ST.

When a window appears with a list of the files on your Easy-
Draw disk, move the mouse until the arrow rests on the
name EASYDRAW.PRG.
This is called pointing.
Double click (press and release very rapidly twice in succes-
sion) the left mouse button.

* From a hard disk

Open the EASYDRAW folder on your hard disk.
Double click on EASYDRAW.PRG.
See Appendix A for full details of hard disk usage.

Storing/Saving Drawings

* New drawing:

Choose FILE SAVE AS.
Type name of drawing in File Selector box.
Click OK.

* Revised drawing: Choose FILE SAVE.

Transparent Objects

* Existing object:

Select the object.
Choose PATTERN TRANSPARENT.

* To opaque:

Select a transparent object.
Choose PATTERN TRANSPARENT.

Note: TRANSPARENT lets objects show through from behind,
even if the transparent object has a pattern.

Vertical Text Labels

Often, business graphics require vertical text labels for charts and
graphs. This can be achieved very simply. First, select the text la-
bel, then stretch the text label so that only one letter will fit on
each line. See the illustration below.

Before

After
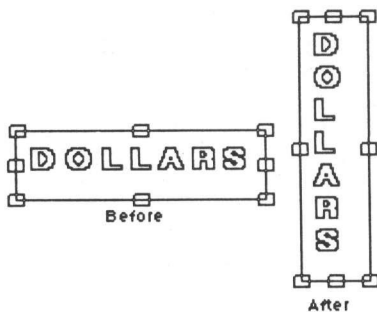
Zooming

*   An area:

Choose ZOOM AREA.
Move mouse pointer to the beginning of the area you want
to zoom.
Hold down left mouse button and draw box around area you
want to fill the window.
Release left mouse button.

*   To whole page: Choose ZOOM FULL PAGE.

*   Actual size: Choose ZOOM NORMAL.

*   Last zoom: Choose ZOOM LAST.

Note: See "Hints" for clever uses of ZOOM AREA.

Hints

Arranging Object Layers: Put Commands

PUT IN FRONT and PUT IN BACK on the Arrange menu place objects all the way at the back or the front. What if you want an object in the middle of the pack? Then, you must arrange the other objects so that the one you want in the middle is shuffled there in the process.

For example, suppose there are three squares: black, red, and green. Suppose you want the green square in the middle with red in front and black in back:

[1]   Select black square, then choose ARRANGE PUT IN BACK.
[2]   Select red square, then choose ARRANGE PUT IN FRONT.

The green square is now in the middle.

Closing Up Polyline and Sketch Objects

With the polyline tool, you can draw multiple-sided objects, such as triangles or hexagons. With the sketch tool, you can draw any free-hand object.

To change the open/close status of polyline or sketch objects:

[1]   Select the objects.
[2]   Choose EDIT OPEN/CLOSE.

Selected objects that are open will close. Selected objects that are closed will open.

Creating a Perfect Square

The box drawing tool creates both squares and rectangles. To draw a square, you have to decide when the object is square, then paste it down. To draw a perfect square, follow these directions:

[1]   Choose PAGE GRID SNAP ON to turn on grid snap.

[2]   Choose PAGE GRID DISPLAY ON to turn on the grid display.

[3]   Choose the box drawing tool.

[4]   Draw your square to the grid lines.

When you paste down the square, Easy-Draw snaps it to the grid lines and makes it a square.

Grouping Text and a Graphic Box

Grouping a text object and a surrounding graphic box lets you automatically reformat the text when you stretch the box. This can be very useful, for example, for organization charts and other business presentations.

[1]   Select the text object.
The text box becomes visible.

[2]   Stretch the text box so that it is a little smaller than the graphic box.

[3]   Select both the text object and the box object and create a group so that they become one object.

[4]   Stretch the object as needed to reformat the text.

Note: Remember that if you need to edit the text, you need to explode the group first.

Hiding Part of an Object

After drawing a complex object, you may want to erase a small portion. If this cannot be done by either deleting an object or by editing a polyline, you can place a non-transparent object with a white or no-line style over the area. See the following illustration.
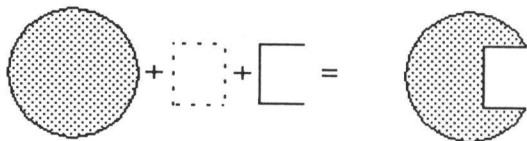
Creating Pie Charts

[1]   Turn GRID SNAP on and display the grid to make it easier to
      align the pie segments.

      A grid setting of 1/8" works well. This assures that each
      segment starts from the exact center of the pie.

[2]   Draw the wedges.

      Remember that you can change the beginning and end an-
      gles during creation. Use the cursor keys so that you have
      exact angles that are easy to match.

[3]   Once the wedges are drawn, fine tune the pie chart by se-
      lecting different patterns for each wedge, adding text labels
      and arrows, and shadowing an exploded section, if you like.

Example Pie Chart
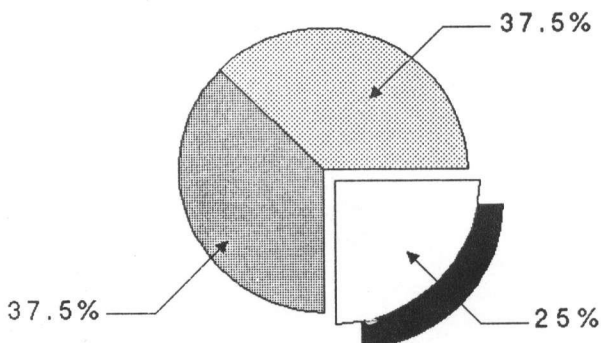
Redrawing the Screen

If the screen looks irregular for any reason, ask Easy-Draw to re-
draw the screen:

[1]   Move the pointer to a slider in one of the scroll bars.

[2]   Click the left mouse button.

Shrinking Text Block Height to Fit Text

If you create a tall text block then type text that does not fill it,
you'll want to shrink the text block height to fit the text. If you
don't, when you switch to full page zoom, text will fill the full text
block, which means text appears to flow into a part of the drawing
where it won't be printed. Shrinking the text block height assures
that full page zoom constrains the text to its actual area size.

[1]   Select the text block.

[2]   Drag up one of the sizing markers on the bottom of the text block until the box fits the height of the text.

As an alternative:

With the cursor after the last character, press F10 to break the text block.

Delete the new (empty) text block (EDIT DELETE).

Using File Selector Box

Besides using the File Selector Box to load and save files , you can use it to change the path and when changing disks.

Changing the Path

The path consists of a disk drive designator (e.g., A:), directory names (if any), and a designation for the type of files to list (such as files with the extension .GEM).

Warning   Do **not** press Return while the cursor is in the path line of the File Selector Box. Always move the mouse pointer to the list of files and click the mouse button first.

*   Changing drive designator

[1]   Press the left arrow key to move the cursor to the colon.

[2]   Backspace over the letter, then type the new letter.

[3]   Move mouse pointer to file box and click left mouse button.

*   Changing the file extension

[1]   Backspace over the three letter extension (e.g., GEM).

[2]   Type the new extension (e.g., TXT).

[3]   Move mouse pointer to file box and click left mouse button.

Note   The first time the File Selector Box appears, it shows the default drive (the drive Easy-Draw started from). After that, each window can have its own path.

Changing Disks

You'll change disks when you want to load pictures or text files that are on a different disk.

[1]   Replace the disk in the disk drive.

[2]   Position mouse pointer on "X" box in the upper left corner of File Selector Box.

[3]   Click left mouse button for the list of files on the new disk.

Appendix A.   Installing Easy-Draw on a Hard Disk

Important: All steps in the following directions should be performed using backup copies of your Easy-Draw disks and after you have backed up your hard disk for safety.

These procedures are somewhat technical in nature and should be performed by qualified personnel only. Read all steps before proceeding.

[1]   Boot with your hard disk boot disk so you can perform the following steps.

[2]   Create a new folder on your hard disk called EASYDRAW

[3]   Copy the following files from your Easy-Draw Master Disk into the EASYDRAW folder on your hard disk:

EASYDRAW.PRG   EASYDRAW.RSC
OUTPUT.PRG   OUTPUT.RSC

[4]   Create another new folder on your hard disk called GEMSYS.

[5]   Copy all the files from the folder GEMSYS on you Easy-Draw Master Disk into the GEMSYS folder on your hard disk.

To do this after creating the folder on the hard disk, open both GEMSYS folders by double clicking their names. You can copy about 10 files at a time by selecting them with a box.

[6]   Copy the file GDOS.PRG from the AUTO folder on the Easy-Draw Master Disk into the AUTO folder that is already on your boot-up floppy disk.

[7]   Copy the sample drawings (.GEM files) from the Easy-Draw Drawing Disk to the EASYDRAW folder on your hard disk.

[8]   Copy the file ASSIGN.SYS from the Easy-Draw Master Disk to your normal hard disk boot-up floppy disk. (root directory).

[9]   Using your favorite editor (like FAST ST-Editor from Migraph), edit the PATH command in ASSIGN.SYS to include the proper drive designator for your hard disk (C: or D: or E: or F:).

The next time you reboot your system with your normal boot up disk, you should see the GDOS 1.1 Resident message.

To start Easy-Draw now:

[1]   Open the EASYDRAW folder on your hard disk.

[2]   Double click on EASYDRAW.PRG.

Appendix B.   Creating New Drawing Disks

This appendix describes which files should be on drawing disks for various system configurations. The following sections reflect the configuration of disks inside your Easy-Draw package.

Note for All Systems   When you save an existing drawing, Easy-Draw creates a backup file (.BAK extension). Delete unneeded .BAK files to save disk space.

Single Drive Systems

Insert a drawing disk in the drive **after** you start Easy-Draw.

* **Single-Sided Drives**   (Model SF 354 disk drive)
[1]   Format a new blank disk single-sided.
[2]   Copy these files from the original drawing disk:
      GEMSYS Folder   OUTPUT.PRG   OUTPUT.RSC
The disk will have about 150K for (.GEM) drawings.

* **Double-Sided Drives**   (Model 314 disk drive)
[1]   Format a new blank disk double-sided.
[2]   Copy these files from the original drawing disk
      GEMSYS Folder   OUTPUT.PRG   OUTPUT.RSC
The disk will have about 500K for (.GEM) drawings.

Dual Drive Systems

A drawing disk should be in drive B while using Easy-Draw.

* **Single-Sided Drives**   (Model SF 354 disk drive)
[1]   Format a new blank disk single-sided.
[2]   Copy OUTPUT.PRG from the original drawing disk.
The disk will have about 290K for (.GEM) drawings.

* **Double-Sided Drives**   (Model 314 disk drive)
[1]   Format a new blank disk double-sided.
[2]   Copy OUTPUT.PRG from the original drawing disk.
The disk will have about 550K for (.GEM) drawings. For more space, see Appendix C, "Hints for Double-Sided Drives."

Appendix C.   Hints for Double-Sided Drives

The information in this appendix applies only if you have a
1040ST with a built-in double-sided disk drive or a 520ST with a
Model SF314 disk drive for drive A.

Hint for Single Drive Owners   Copying an entire disk file-by-file
is not only tiresome but also it is easy to insert the wrong disk
while swapping. We recommend that before attempting the fol-
lowing procedures that you buy or borrow a second disk drive.

Note   The Easy-Draw disks are formatted single sided. You need
to format two new blank disks double sided before proceeding.

Creating a New Master Disk (All Systems)

[1]   Copy all the files from your original Easy-Draw Master disk
onto a blank, double-sided formatted disk.

Important   Do **not** do a diskcopy. A quick way to copy all the
files is to drag the A icon (original Master disk) over window
B (blank disk) and drop the A icon inside the window.

[2]   Copy OUTPUT.PRG file from the Easy-Draw Picture disk
onto the new master disk.

You now have one disk that contains all the Easy-Draw files.

Dual Drive System Only

Use the entire second blank formatted disk to store drawings.

Appendix D.   Using Additional Fonts

Important: To assure proper operation of Easy-Draw on your ST and your printers, use only tested GEM fonts available from Migraph.

Easy-Draw uses standard proportional space GEM fonts for both color and monochrome displays and each output device. A font style called "Swiss" is provided with Easy-Draw. This font is similar in style to Helvetica[TM].

Additional fonts are available from Migraph in font packs, which include directions for proper installation. When you purchase a font pack, place the font documentation here in your Easy-Draw manual.

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The SuperCharger

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MIGRAPH

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CONTENTS

INTRODUCTION

Supercharger is a product that allows you to convert paint and scanned images, as well as portions of any screen, into standard GEM bit-image format (.IMG). For those people who own the bit-image enhanced version of EasyDraw, these images can then be placed onto your EasyDraw page for use in newsletters, brochures and more.

The Supercharger is powerful, yet easy to use. It consists of two separate programs: an image converter and a snapshot utility. The converter allows you to load and edit images, and save them in .IMG format. The snapshot utility allows the capture of any screen from your favourite application, which can then be loaded into the converter for editing.

Once an image has been converted to .IMG format, it can then be used with any application that loads .IMG files, such as EasyDraw. We know that once you become familiar with the Supercharger you'll discover many uses for the images which will enhance all your projects.

What's In This Manual

This manual is divided into two major parts: a section on using the image converter and a section on the snapshot utility. This manual is not meant to be read cover to cover, but used as needed. You'll find a tutorial for using the converter. It is recommended that you go through the tutorial first, and then refer to the manual as required.

Some Terms

The following terms and their definitions will help you to understand the different parts of the Supercharger and how they will work.

Aspect Ratio: Aspect Ratio usually refers to the horizontal width versus the vertical height of one pixel in an image or on an output device (such as your monitor). Low-res colour and high-res mono-chrome monitors on the ST have a ratio close to 1:1. We recommend

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running the converter in LOW or HIGH resolution when loading a low-res or high-res picture (use medium-res when loading or editing a medium-res picture) because of their near 1:1 ratio.

Bit-Image are paint images created on a dot by dot or pixel basis and are usually screen resolution dependant. In other words, one dot on the screen corresponds to one piece of information in the file. Most paint images have a resolution of 75 dpi.

Scanned images originate from either line-art or half-tones which are then optically read into the computer using a hardware device called a scanner. These images can vary in resolution, or dots per inch, depending on the sophistication of the scanning software. The resolution of scanned images typically ranges from 75 to 300 dpi.

Digitised images are those which have been optically read into the computer through a video scanner. The images are usually saved in paint format.

Compressed bit-images are those which when stored, encode the pixel information, rather than storing each dot separately. Compressed and uncompressed images look the same on the screen, but the compressed method of storage is preferable because the files take up less disc space.

dpi: Abbreviation for Dots Per Inch, which describes the resolution of a device or file. It is typically used by hardware manufacturers to state the maximum level at which a monitor, printer, scanner, etc operates. It is also used for the resolution of a particular graphics image.

Mapping: Mapping has almost the same meaning as convert. Basically it refers to changing graphic information from one form to another. For instance, in the Supercharger, all colour pictures are "mapped" to monochrome. That is, all colours are converted to a shade of grey created by a pattern of black and white dots. Graphic information is also mapped when viewing a picture at different screen resolutions.

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Memory: A hardware component inside your computer which is used to store any information during the current program.Typically this information is only stored while the computer is powered "ON". That's why images saved with the Supercharger should be saved to disc for permanent storage.

Pointer: The indicator on the screen that shows where where you are on the drawing. The Supercharger has the following pointer shapes:

$+$ Cross hair (drawing) pointer

✍   Finger (section) pointer

✋   Open hand (move) pointer

▲   Arrow (choice) pointer for menus, commands, dialogue boxes, and drawing tools

Resolution: The common definition of resolution refers to how many pixels are contained per inch in either a vertical or horizontal direction. It is also used sometimes to state the number of pixels across the width or height of a device.

Scanner: A scanner is a piece of hardware that optically reads information a computer, usually from line-art or photographs. This information is then stored in a file which can be used with programs like the Supercharger and EasyDraw to become part of newsletters, reports etc.

Storing Images

You are advised against saving your images on your original Supercharger disc. Instead, save your images on a blank, formatted disc, or a disc which has a major portion still available for storage.

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THE IMAGE CONVERTER

The image converter allows the loading of bit-images from Degas, Degas Elite, Neochrome, MacPaint and .IMG files. Once loaded, they can be edited and saved in monochrome GEM standard compressed .IMG format. Because most paint programs have developed their file formats for saving images, they must first be saved in .IMG format to be used with Easy-Draw. The reason for this is that Easy-Draw was developed according to GEM standards and so is only compatible with GEM standard file formats.

This section on the converter is divided into five parts;

* A section describing bit-image files
* A tutorial on using the converter with paint images
* A section on techniques
* A section on scanned images
* A summary of menu commands and tips

The best way way to become familiar with the converter is to go through the tutorial using one of the sample images provided on the disc.

Bit-Image Files

On your disc there are several folders that contain samples of all the types of bit-images that are supported. The first folder is entitled "Paint" and contains the following picture formats:

* **Degas**

  filename.PI1 (low resolution)

  filename.PI2 (medium resolution)

  filename.PI3 (high resolution)

- **Degas Elite**

  filename.PC1 (low resolution)

  filename.PC2 (medium resolution)

  filename.PC3 (high resolution)

- **Neochrome**

  filename.NEO (low resolution)

- **MACPAINT**

  filename.MAC (high resolution)

Bit-images in all three resolutions (low, medium, high) have been provided for you. Previously, a bit-image could only be viewed at the resolution in which it was created. For instance, you could only view a low-res bit-image with a colour monitor set at low-res.

With the converter, however, you can load any bit-image, even those created at a different screen resolution than what you are using. Most paint images are created in colour so they can take advantage of the many colours and shades available. When using the Supercharger, all colours are automatically mapped to monochrome; i.e., each colour is translated into a shade of grey, created by a pattern of black and white dots. Even if you are using a colour monitor, your image will appear in black and white. The reason for this is that for page layout work, most affordable high resolution dot matrix and laser printers print only in black. By showing the bit-image in black and white, you'll get the best possible print out.

To be able to properly display the patterns while maintaining the image's integrity, the viewing area is also increased, The resolution of the viewing area will vary, depending on whether the original bit-image was in colour or black and white, and if in colour, which method of mapping was chosen.

When loading a colour bit-image, a dialogue will appear that asks you to choose a method for mapping the image. Each method offers a different way handling the colours of the picture and the dot ratio. Your picture will look better or worse, depending on which method you choose. It is mostly by trial and error that you'll find which you

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prefer for different bit-images. for more detailed explanation of how this dialogue box works, follow the tutorial and read the section on techniques.

Tutorial

This section contains a short walk-through lesson to make you familiar with the basic techniques for using the converter. When you're done, you should know enough about using the converter to explore it fully and easily. Please note that although this tutorial covers using both colour and monochrome monitors, the illustrations in this section were done with a monochrome monitor. This section covers the following topics:

- Starting the converter
- How to load a monochrome and colour bit-image
- How to view an image
- How to edit an image
- How to clip, or select an area of an image
- How to save a .IMG file
- How to quit the Supercharger

Starting the Supercharger

To start the tutorial on the Supercharger from the floppy disc, follow these instructions:

1   Insert the Supercharger disc in drive A.

2   Turn on your Atari ST. If your are using a colour monitor please set it to low resolution.

3   When a window appears with a list of the files, move the mouse until the arrow rests on the name "SCHARGER.PRG".

4   Double click the left mouse button.

The Supercharger wil start and you will see the following screen:
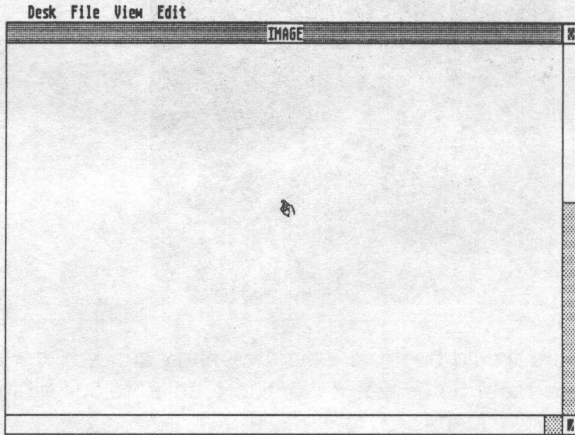
Loading a Bit-Image

In this section you will load a monochrome and colour bit-image.

To load a monochrome bit-image, follow these instructions:

1 Point to the File menu. The menu drops down and shows five formats: DEGAS, DEGAS ELITE, .IMG, MACPAINT, and Neochrome.

2 Point to .IMG and click the left mouse button. A File Selector Box will appear.

3 Point to the folder "IMAGES.IMG" and click the left mous button. The folder will open showing the files listed in it.

4 Click on TIGER.IMG.

5 Click on OK.

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The bit-image will appear as follows:

Normally, you would begin to view the image and edit it if necessary, but because most times you'll want to load a colour bit-image, we'll go through those steps.

Loading a Colour Bit-Image

1 Point to the File menu and click on DEGAS. A File Selector Box will appear.

2 Point to folder "PAINT" and click on the left mouse button. The folder will open showing the files listed in it.

3 Click on BEE.PI1.

4 Click on OK.

A mapping dialogue box will appear so you can select a method for mapping the bit-image.
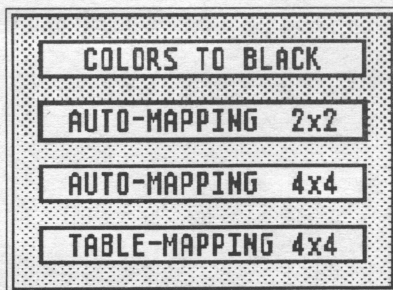
Colors to Black

This method offers three choices for turning all colours, except white, into solid black.

Auto-Mapping 2x2

This method maps each pixel in the original image to a 2x2 matrix, and assigns each colour a black and white pattern.

Auto-Mapping 4x4

This method maps each pixel in the original image to a 4x4 matrix, and assigns each colour a blck and white pattern.

Table-Mapping 4x4

This method provides you with a table so you can set the pattern for each colour yourself.

5   Click on Map to Black

An alert box will appear, as follows:
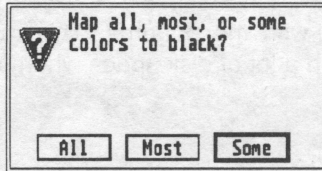
6   Click on Some:

Your screen will look like this:

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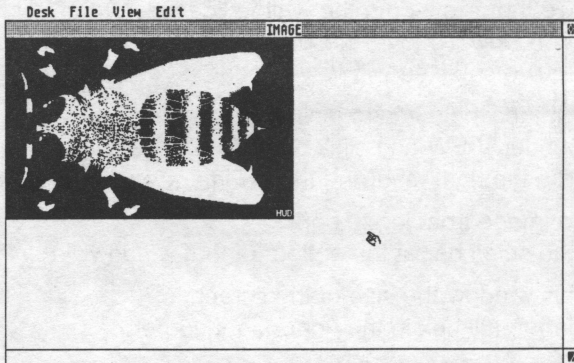
Now you'll reload that same image, but mapped with a different method.

1 Follow steps 1-4 from above.

2 This time select Auto-Mapping 2x2.

Your image will now look like this:
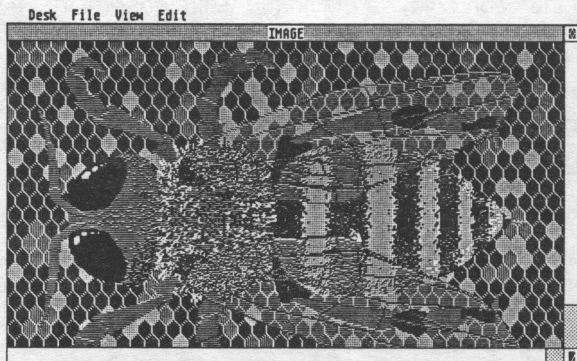
Notice the difference with the patterns. This method offers greater detail without taking up a lot of disk space when saving the image.

Viewing an Image

Now that you've loaded a bit-image, you'll want to experiment with viewing it. Scroll bars are provided to the right and bottom of the image window so that you may view all portions of the image.

Simply move the arrow onto the white slider area, and holding the left mouse button down, move the bar, then release the mouse button. The area you've selected will now appear in your window.

To see what the whole image looks like:
•   Go up under VIEW and click on Open Full ,a window will now appear to the right, showing the full image from top to bottom.

To view the image from left to right:
•   Move the scroll bar at the bottom of that window.

To make this window the size of the screen:
•   Click on the full box in the upper right corner.

To close the window:
* Go up under VIEW again, and click on the Close View

  --OR--

  Click on the close box in the upper left corner of the FULL window.

Note: Changes made in the image window are not reflected automatically in the Full window. You must close the window and reopen it to view them.

Now try the different zoom levels.
* Go up and click on 2x.Your image will now appear twice as large as the original. Notice how the white area on the screen bars has decreased. Because the image is now larger, you are able to view less of it at a time.
* Click on 4x and see the differences in the image. It will be four times the size of the original.
* Now go back to zoom normal.

Editing an Image

Tools are provided so that you can edit images on a pixel/dot basis. To edit an image, follow these directions:

1 Point to the Edit menu.The Edit menu drops down and displays these choices: PEN, INVERT IMAGE, NEW IMAGE.

2 Click on Pen with the left mouse button.Your pointing arrow has now become a cross hair pointer.

3 Press the left mouse button and holding it down, move the mouse slowly. It will leave black dots wherever you have moved the mouse.

4 To create one dot, simply press and release the left mouse button without moving the mouse.

Feel free to experiment with the pen, and do some freehand sketching. Four different pen widths are provided. F1 being the narrowest and F4 the widest.

To change from one width top another:
- Press the function key for the width you want before you begin to edit.

To change the pen from black to white:
- Hold the shift key down while editing.

Note: While you can edit an image and in fact create new ones with the pen command, the Supercharger was not intended to be a paint program.

When you have finished editing:
- Go up under **Edit** and click on REDISPLAY. Your cursor will now return to the arrow shape.

The converter also provides a way to invert or reverse the image.

To invert the image:
- Point to the **Edit** menu and click on INVERT. Your image will now invert: What was black before will now be white, what was white will now be black.

Often an image that you have loaded will look better when inverted.
- Invert the current image, and then invert it back to the original.

Clipping an Image

Often after you have loaded an image and edited it, you'll want to save only a portion for later use.

To clip or select a portion of an image, follow these directions:

1 Point to the **Edit** menu.

2 Click on Define. Your pointer will now turn into the finger pointer.

3 Move the hand to the upper left corner of the portion of the image that you want to select.

4 Holding the left mouse button down, drag the mouse until the box is the size of the area you want.

5 Release the mouse button.

A white, wire-frame box, called the clipping box, will now be on your screen.
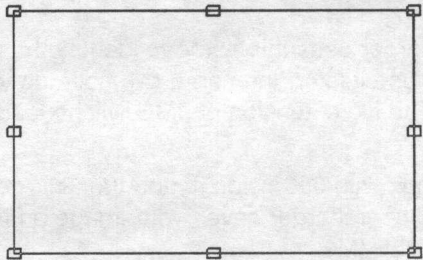
You can edit and move this box. For further information on this, see the section on Techniques.

Saving an Image

When you are ready to save an image, there are two choices under the File menu: Save CLIP IMG and Save FULL IMG. One allows you to save a portion of the image (the portion that is in the clipping box), while the other saves the whole image.

Note: Single disc drive owners must place a disc in drive A before saving images. Dual drive owners should already have their disc in drive B.

To save a portion of an image, follow these directions:

1   Choose Save CLIP IMG from the File Menu. The File Selector box appears like this:

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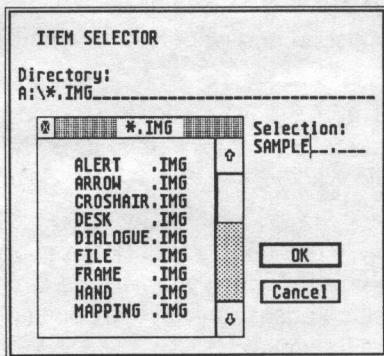
2 Type the name of your image, such as:

SAMPLE

The Supercharger uses this name to identify the image for you so that you can use it later. the name can have up to eight letters in any order . The file extension of .IMG will be loaded automatically.

3 Point to the box with OK inside it, and then click the left mouse button. The Supercharger saves your image on the disc in a file named SAMPLE.IMG.

Note: The default drive to save your image is the drive that the Supercharger was started from.

To change the disc drive:
• Edit the line under "Directory" in the File Selector box.

For example, to save to drive B:

1 Move the mouse pointer to the Path name and click.

2 Then, using the left arrow key, go back to A:

3 Backspace over A, and type in B.

4 Move the mouse pointer above the first file name, and click the left mouse button.

To save a full image, you would follow the previous directions, but choose SAVE FULL .IMG instead of SAVE CLIP .IMG

Quitting the Supercharger

When you have finished and want to shut off the Supercharger, follow these directions:

1 Choose QUIT from the file menu. When you choose quit, it will ask you if you really want to do this. If you have not saved your image yet, and want to, click on cancel. Save your image, and then quit.

2 When a dialogue box appears, Click the answer that suits you. The Supercharger will obey your wishes, and then quit. You'll see the GEM desktop again. Only at this point is it safe to remove your disc from the drive.

Summary of the Supercharger Tutorial

The following list will remind you of the directions and techniques you practiced in this section of this manual.

- How to start the supercharger by double-clicking on the name SCHARGER.PRG.
- How to load a monochrome bit-image by choosing a name from the File Selector box.
- How to load a colour bit-image using two mapping techniques.
- How to view an image at different zoom levels by clicking on Normal, 2x and 4x from the VIEW menu.
- How to view a full image by clicking on Open Full from the VIEW menu.
- How to edit an image dot by dot: by clicking on Pen ON, by pressing on the left mouse button while moving the mouse to add black lines or dots and by varying the widths with function keys F1-F4.
- How to invert an image by clicking on Invert under the EDIT menu.
- How to create a clipping box to select a portion of an image by clicking on Define from the EDIT, and while pressing on the left mouse button, dragging the mouse to form a box around the area you want selected.
- How to save and name an image.
- How to quit the Supercharger.

At this point you should just start the Supercharger again and explore the various tools and commands. Just try it out; you cannot damage the program or your computer while exploring the Supercharger.

If you want to feel a little more confident before jumping in, why not go through the exercises in this section again. If you want to learn more about the menus and their respective commands first, go to the section on the menus. It contains a detailed description of each command.

When you are ready to load a picture onto your own Easy-Draw page, go to the Easy-Draw Addendum. You'll find that it is fun and easy to add bit-mapped and scanned images to your pages!

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Techniques

This section provides a more detailed description of different commands and features found in the Supercharger.

This section contains the following topics;
- Information on colour paint files.
- Mapping choices: **Map to Black, Auto-Mapping 2x2, Auto-Mapping 4x4, Table-Mapping 4x4**.
- Clipping an image.
- Saving an image.
- Printing an image.

Loading a Colour Paint File

This section gives you more detailed information that you will find helpful when loading colour paint images.

When loading a colour paint file into the converter, colours are mapped to monochrome using patterns of black and white. A dialogue box will appear which asks you to select a method for mapping the colours. There are four choices, each of which will affect the image in a different way. Although we make recommendations, the individual picture and your equipment configuration will help determine which method you prefer for mapping various bit-images.

The methods are listed in order, top to bottom, from the one that converts images the most quickly (Map to Black) to the most slowly (Table-Mapping 4x4). The first method is the fastest because the images are mapped to pure black and white. The last has many patterns. The more mapping the converter has to do, the longer it takes to convert an image. We recommend using the first method, Map to Black, to preview your images, especially if you've never seen them before. It is the fastest loading and enables you to view many images quickly.

Even more important is how much disk space an image takes when saved. Those images with fewer patterns take the least amount of disk space, while those loaded with 4x4 take the most. Because full screen images loaded with 4x4 can take up so much memory, up to 130K or more, it is recommended that you save only portions of the

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image, otherwise you may run out if room on the disc when you try to save an image, or in your computer when you try to use the images with Easy-Draw.

When selecting a mapping method, it is important to consider what you want the final printed image to look like. Do you want it to be large, small, with great detail, or with little detail? Several factors besides the mapping method will influence how the final printed image will look, including:
• The printer's resolution
• The size and complexity of the image
• The desired size of the final image

Each of these factors must be looked at and taken into consideration. For instance, if you have an .IMG file saved with 4x4 patterns, and you want to print it using a 9-pin dot matrix printer that has a resolution of 120x144, the printer will "drop" pixels because the image has a greater resolution than the printer can print. What happens is that the printer figures a mathematical solution and may "drop", or not print certain pixels.

The same thing will happen if you have a large original image that you want to reduce to a smaller area. It all depends on how many pixels are in the image, and how many pixels your printer is capable of printing.

Or, perhaps you have the opposite suituation where you want to print a low-res bit-image on a 300 DPI laser printer. The printer has a higher resolution than the image, and so will add pixels to it. The same will occur when a small original image is enlarged to fit the big area.

Likewise, the complexity of the image must be considered. A simple image, with few patterns, will look better reduced than a complex image with many patterns.

In general, if you have a 9 or 24 pin printer, you'll want to use the first two methods, Map to black or Auto-Mapping 2x2. Use the last two, Auto-Mapping 4x4 and Table-Mapping 4x4, if you have a laser printer as well as a large amount of memory in your computer, or when you plan on saving out a small portion of the image using a clipping box.

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Mapping Choices

This section provides an in-depth look at the four mapping choices and the effects they have on colour images.

```
┌─────────────────────────────┐
│  ┌───────────────────────┐  │
│  │   COLORS TO BLACK     │  │
│  └───────────────────────┘  │
│  ┌───────────────────────┐  │
│  │  AUTO-MAPPING   2x2   │  │
│  └───────────────────────┘  │
│  ┌───────────────────────┐  │
│  │  AUTO-MAPPING   4x4   │  │
│  └───────────────────────┘  │
│  ┌───────────────────────┐  │
│  │  TABLE-MAPPING  4x4   │  │
│  └───────────────────────┘  │
└─────────────────────────────┘
```
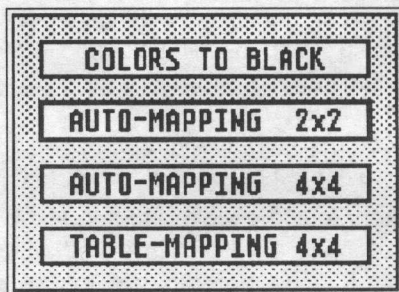
Colors to Black

Recommended for previewing paint images, black and white digitised images saved in paint format, and for images with few colours. Can be used satisfactorily for many medium-res pictures.

When this method is chosen an additional alert box will appear that looks like this:

```
┌─────────────────────────────────┐
│  ╱╲    Map all, most, or some   │
│ ╱ ?╲   colors to black?         │
│ ╲__╱                            │
│                                 │
│   ┌─────┐  ┌──────┐  ┌──────┐   │
│   │ All │  │ Most │  │ Some │   │
│   └─────┘  └──────┘  └──────┘   │
└─────────────────────────────────┘
```
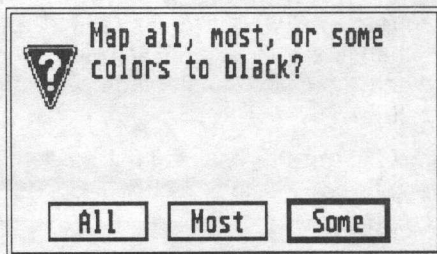
It offers you three choices:

ALL This choice automatically turns all coloured areas of the original image to solid black, while keeping all the white areas solid white. The result is a harsh looking image that may not resemble the

SOME This choice offers the least radical treatment of the colours. Only the dark colours (those that are over 70% black) are mapped to solid black, while the rest are mapped to white. This is the method we recommend for previewing images.

The image will look different, depending on which of these you choose. Remember that because all or most of the previous colours are now black, you will lose a lot of detail and depth in the image, which colours normally create. One of the advantages of the Map to Black method is that when the images are saved, they take up the least amount of disc space.

Auto-Mapping 2x2

Recommended for paint images that have several colours, and coloured, digitised images.

With this method, a pixel in the original image is converted into a 2x2 matrix or four pixels of information. For example, a 320x200 low-res colour picture will be mapped into a 640x 400 .IMG file, while a 640x200 medium res colour picture will be mapped to 1280x400.

As the original colour paint file is loaded, the converter will check what colours are in the image, sort the colours from light to dark, and assign an appropriate 2x2 pattern for each other, it will try not to assign the same pattern to each area.

For most paint pictures, this will be the standard method to use if detail is lost using the first method.

Auto-Mapping 4x4

Recommended for low-res images with many colours.

When an image is loaded into the converter with this method, each pixel in the original is mapped to a 4x4 matrix, or 16 pixels. In other words, if the original was a low-res full screen colour image, 320x200, it would be mapped to 1280x800.

As the original colour paint file loaded, the converter will check what colours are in the image, sort the colours from light to dark, and assign an appropriate 4x4 pattern for each dot. Also, when two dark

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areas are close to each other, it will try to assign the same pattern to each area.

Remember that this method will potentially produce a very large .IMG file when saved, so it should only be used for saving small portions of the original image, or if your system has 2MB or more of memory.

Note: If you have a monochrome monitor, you should always select Auto-Mapping instead of Table-Mapping, since you will be unable to preview the colours of the original image.

Table-Mapping 4x4

Recommended for low-res images when you need to control the patterns yourself.

This method should be used with the monitor set to low-res, and is essentially the same as the Auto 4x4, except you have the option of setting the patterns yourself. When you select this method, another dialogue box will appear that looks like this:
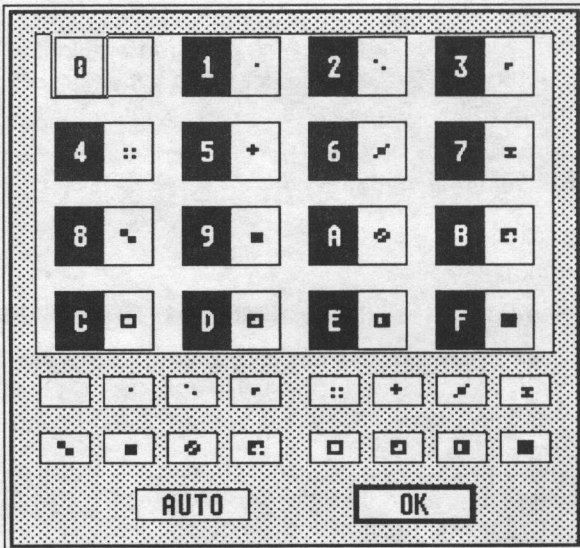
It is the table of colours and patterns. To use this dialogue box, follow these directions:

1   Note the colours and corresponding patterns. The colours you see here are the ones selected by the original artist.

2   Click on AUTO. The converter will now sort the colours from light to dark and assign an appropriate pattern to each colour. The table will now reflect this. This step enables you to see what the converter would pick for each colour.

3   Click on any colour you would like to change and then click on the pattern below that you would like to change it to.

By previewing the original colours first, coupled with what the converter would have chosen, it allows you to make a better choice if you feel the need to alter any of the patterns.

Remember, like the Auto 4x4, this method will produce a potentially very large .IMG file when saved, so it should be used for saving small portions of the image, or if your system has 2MB or more of memory. We highly recommend experimenting by printing different resolution images that have been loaded with of the mapping techniques. In a short time you'll find what works for you and suits your needs.

Clipping an Image

Clipping an image means selecting a portion of it to save out for later use. The portion you want is selected with a white box called the clipping box. You can create clipping box when an image is first loaded, before doing anything else.

To create a clipping box, follow these directions:

1   Move the pointing finger to the upper left corner of the portion of the image you want to save.

2   Holding the left mouse button down, drag the mouse until the box is the size of the area you want.

3   Release the mouse button.

     The clipping box will now be on your screen with smaller boxes along the outline of it. These smaller boxes are called polymarkers.

When you wish to edit the shape of the clipping box, follow these directions:

1 Decide how you would like to change the shape of the box.

2 Chose the appropriate polymarker by placing the finger pointer in it.

3 Hold down the left mouse button, and then move the mouse, either to expand or shrink the box.

To move the clipping box:

1 Move the finger pointer so that it is in the middle of the box.

2 Press the left mouse button until a hand pointer appears.

3 Still pressing the left mouse button, move the box to the area you want.

4 Release the button.

Anytime you use the PEN or NEW IMAGE commands, the clipping box will temporarily disappear from your screen. To make it visible, choose REDISPLAY from the View drop down menu.

There will be time when you find it necessary to create a new clipping box:
• If one was not created when the image was first loaded.
• When the image is very large and, rather than move the box to a new area, you want to create a new one.

Note: When a new box is created, the previous one will be eliminated.

To create a new clipping box:
• Use the DEFINE command, and draw a new box following the same directions as above.

Anytime you want to know the size of your image and the size and location of the clipping box, choose SHOW SIZE from the View menu. A dialogue box will appear that shows the current values.

```
IMAGE: WIDTH 640    HEIGHT 400

CLIP:       X 23         Y 123
      WIDTH 160   HEIGHT 146
           (Information in Pixels)


PIXEL: WIDTH 318    HEIGHT 318
           (Microns)        (Microns)

                                [  OK  ]
```
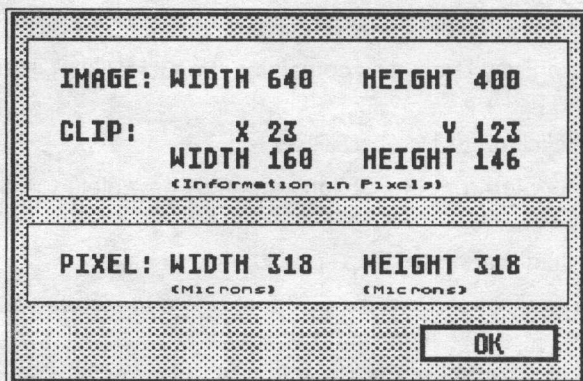
- Click on OK or press the return key to remove the dialogue box.

To save a portion of an image, refer to the Tutorial or SAVE CLIP .IMG in the Commands section of this manual.

Saving an Image

Whether you use the SAVE CLIP or SAVE FULL options from the File drop down menu, you should record certain information about the bit-image for use later in Easy Draw.
- Size of full image or clipping area when saved out of the converter (found in the Show Size dialogue box).
- Original resolution of the image if the image was scanned.

Printing an Image

Sometimes you will want to print out the .IMG files you have saved, before you load them into Easy Draw. For this reason the converter saves a small .GEM file along with each .IMG file. While this file contains enough information for OUTPRINT.PRG to print the image file, do not load this .GEM file into Easy Draw. To print an .IMG file, you will run the Outprint program from the desktop level after first booting with your Easy Draw disk.

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To print an image, follow these directions:

1 Insert the Easy Draw disc containing the OUTPRINT.PRG into drive A

2 Double click on OUTPRINT.PRG

3 Choose printer from the Options menu. A new dialogue box will appear.

4 Set the Justification to "Top" and "Left".

5 Choose Add Name from the Edit menu to add picture name(s) to the print list. The File Selector box appears.

6 Type or choose the (.GEM) name of the pictures you want to print.

7 Choose Start Outprint from the File menu. The Start Outprint dialogue box appears.

8 Click on printer.

9 Click on OK to start printing

When printing is finished, choose Quit from the File menu to quit printing and return to the desktop.

Note: An .IMG file that is printed through Outprint may not look as good as one that was sized in Easy Draw. This has to do with the image's resolution and the resolution of your printer. For further information regarding this and using Outprint, refer to the Easy Draw Addendum.

Scanned Images

Scanned images differ in a number of ways from paint images. Foremost is that the original art was probably not computer generated, but came from line art or a photograph (halftone). The Supercharger supports only those scanned images saved in GEM standard .IMG format. Because they are already in .IMG format, all the mapping decisions that you previously had to make when loading a colour bit-image are no longer necessary.

When you are at the desktop level, before you run the Supercharger, take a quick look at the file size of the scanned images you intend to use and jot them down. .IMG files can be potentially very large,and depending on how much memory you have in your computer, you may run into problems loading them into the converter.

Also, when you are not sure whether the scanned image is compressed or not, you can tell after saving it out through the converter, by comparing the before and after file sizes. If the file size is smaller, then the original was compressed. If the file size is the same, then the original was not compressed.

Once you are in the converter, to load a scanned image, follow these directions:

1   Go up under Edit and click on LOAD .IMG. A File Selector box
    will appear.

2   Click on the .IMG file that you wish to load.

3   Click on OK

For further information on loading files, see the Tutorial.

Once an image has been loaded you can view, edit, invert it, save it, etc just like any other image. The same considerations that applied to bit-images with regards to image complexity, resolution, and your printer's resolution, still apply. Please refer to the "Techniques" section of this manual for further information on this subject.

Scanners

Scanned images typically have a resolution ranging from 75 DPI to 300 DPI. The higher the resolution, the sharper the image. One of the major advantages of having access to a scanner is that existing line art and photographs can be quickly and easily scanned for use in reports, newsletters, brochures, etc.

Different scanners are available on the market that will save images out in GEM standard .IMG format. Here is the information on two of them.

The Navarone scanner uses a Canon IX-12 scanner with their own interface and software. This scanner can scan and save out images

and horizontal resolutions are always the same. This scanner will hook up directly to an Atari, so if you're looking for a scanner to scan your own materials, this one will work.

Another scanner, the HP Scanjet, is a flatbed scanner of a more recent technology and is capable of scanning images at mixed resolutions, such as 120x144 (9-pin printer resolution). The benefit of this is that you can scan images exactly tuned to the resolution of your printer. Your print out will look exactly like the scanned image, and you avoid the problem of your printer "dropping" or adding dots to correct the resolution. Currently, to use this scanner, you need to scan your material on an IBM computer, and then transfer the images to your ST.

Summaries

This section provides a quick summary for easy reference of Migraph Supercharger commands and some tips for using the Supercharger more effectively.

Menu Commands

The description of the commands appear in the order they appear in the menus. Directions for using the commands appear in this section, and in the chapters entitled "Techniques".

Note: Commands that display * followed by a letter offer keyboard shortcuts for the experienced user. The * symbol means, hold down the Alternate key and press the letter key.
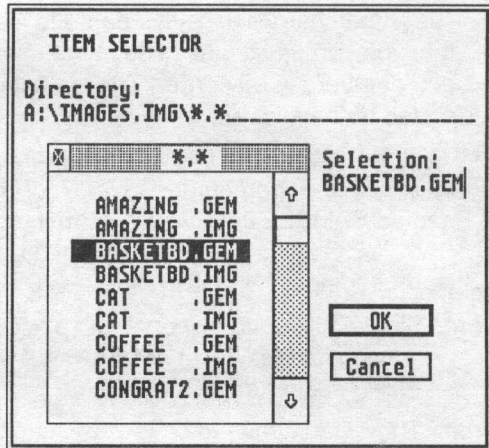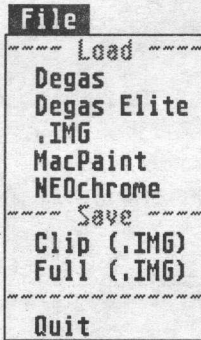
Desk Menu

```
Desk
  SuperCharger info..
  ~~~ ~~~ ~~~ ~~~ ~~~ ~~~ ~~~
  Snapshot
```
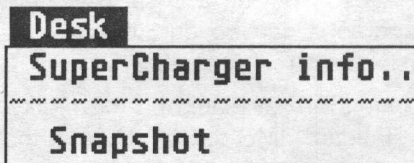
SuperCharger info [Desk]

Use Supercharger Info to see the version number.

Snapshot [Desk]

This desk accessory allows the capture and saving of screen images from Gem applications. For a description of how the Snapshot utility works, see the section of this manual entitled "Snapshot Utility".

File Menu

```
 File
~~~~ Load ~~~~
 Degas
 Degas Elite
 .IMG
 MacPaint
 NEOchrome
~~~~ Save ~~~~
 Clip (.IMG)
 Full (.IMG)

 Quit
```

```
 ITEM SELECTOR

 Directory:
 A:\IMAGES.IMG\*.*_____

 ▓▒▒▒▒▒▒ *.* ▒▒▒▒▒▒     Selection:
                        BASKETBD.GEM
    AMAZING .GEM   ⇧
    AMAZING .IMG
    BASKETBD.GEM
    BASKETBD.IMG
    CAT     .GEM
    CAT     .IMG      ┌──────────┐
    COFFEE  .GEM      │    OK    │
    COFFEE  .IMG      └──────────┘
    CONGRAT2.GEM   ⇩  ┌──────────┐
                      │  Cancel  │
                      └──────────┘
```

Load [File]

Use Load to load an image created and stored in that particular format. The formats are the ones currently supported by the Supercharger. When you choose one of these, the Supercharger displays the File Selector box to ask you for the name of the image you wish to load. See "Hints" for information about using more than one disc drive.

Save Clip (.IMG) [File]

Use SAVE CLIP .IMG to save a portion of the image that you have selected using a clipping box. To save your image, type a name for your image in the File Selector box (see the description of the file menu for the printer of the file selector box). Include disc drive and pathname information if you want to store the image on a different disc drive or directory.

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When you wish to save a portion of an image, follow these directions:

1   Define a clipping box if you have not already done so.

2   Choose SAVE CLIP IMG from the File menu. The File Selector box appears.

3   Type a name for your image, such as:

SAMPLE

The Supercharger uses this name to identify the image for you so that you can use it later. The name can have up to eight letters and numbers in any order. The file extension of .IMG will be added automatically.

4   Point to the box with OK inside it, then click on the left mouse button. The Supercharger saves your image on the disk in a file named SAMPLE.IMG. At the same time, another file, SAMPLE.GEM is automatically saved, which is used for printing your bit-image.

Note: Single disk drive owners must place a disk in drive A before saving images. Dual drive owners should already have their disk in either drive.

Note: The default drive to save your image is the drive that the Supercharger was started from.

To change the disk drive:

•   Edit the line under "Directory" in the File Selector box.

For example, to save to drive B:

1   Move the mouse pointer to the pathname and click.

2   Using the left arrow key, go back to A:.

3   Backspace over A, and type in B.

4   Move the mouse pointer to the list of names

5   Move the mouse pointer to the white area just above or to the left of the top name.
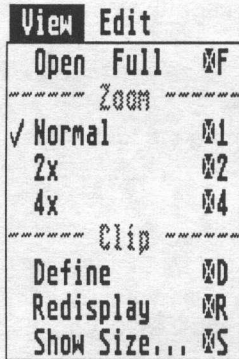
Save Full (.IMG) [File]

Use SAVE FULL IMG to save the whole image that you currently have loaded in the converter. To save your image, type a name for

your image in the File Selector box (see the description of the File menu for a picture of the File Selector box). Include disk drive and pathname information if you want to store the image on a different disk drive or directory.

Quit [File]

Use QUIT to quit the Supercharger. The Supercharger will ask you if you wish to quit. If you have not saved your image, and wish to, choose Cancel, and save your image. Once you say OK to quit, the Supercharger will return to the GEM desktop.

View Menu

```
┌──────────────────────┐
│ View  Edit           │
├──────────────────────┤
│   Open  Full    ⌨F   │
│ ~~~~~~ Zoom ~~~~~~   │
│ √ Normal        ⌨1   │
│   2x            ⌨2   │
│   4x            ⌨4   │
│ ~~~~~~ Clip ~~~~~~   │
│   Define        ⌨D   │
│   Redisplay     ⌨R   │
│   Show Size...  ⌨S   │
└──────────────────────┘
```

Open/Close Full [View] *F

Use OPEN FULL to view the full image. The window will compress the image so that you can view it from top to bottom. The aspect ratio of your monitor and your original image will taken will be taken into account. Use the scroll bars to view the image from left to right, or click on the full window box in the upper right of the full image window to display the full width.

Use CLOSE FULL or click on the close window box in the upper left corner of the full window to close the viewing window.

Note: The Supercharger corrects the image to maintain the aspect ratio of the image as well as the screen.

ZOOM NORMAL [VIEW] *1

Use ZOOM NORMAL to return to the normal size of your image after having chosen either ZOOM 2X or ZOOM 4X.

At zoom normal, one pixel on the screen is equivalent to one pixel in the original image.

ZOOM 2X [VIEW] *2

Use ZOOM 2X to enlarge the image to twice the normal size.

ZOOM 4X [VIEW] *4

Use ZOOM 4X to enlarge the image to four times the normal size.

CLIP DEFINE [VIEW] *D

Use DEFINE to create a clipping box that will enclose a portion of the image that you wish to save. Unless you created a clipping box when you first loaded an image, you must use DEFINE to create a clipping box prior to saving a portion of the image.

To create a clipping box:

1   Point to the edit menu.

2   Click on define. Your pointer will now turn into the finger pointer .

3   Move the hand to the upper left corner of the portion you want to save.

4   Holding down the left mouse button, drag the mouse until the box is the size of the area you want to save.

5   Release the mouse button.
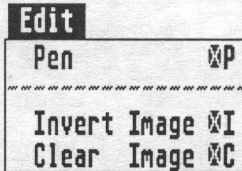
Clip Redisplay [View] *R

Use REDISPLAY to show the clipping box after using the Pen command. Your clipping box MUST be displayed to be able to use SAVE CLIP IMG.

Show Size [View] *S

```
IMAGE: WIDTH 640    HEIGHT 400

CLIP:      X 23           Y 123
       WIDTH 160    HEIGHT 146
            (Information in Pixels)


PIXEL: WIDTH 318   HEIGHT 318
         (Microns)        (Microns)

                            ┌──────────┐
                            │    OK    │
                            └──────────┘
```
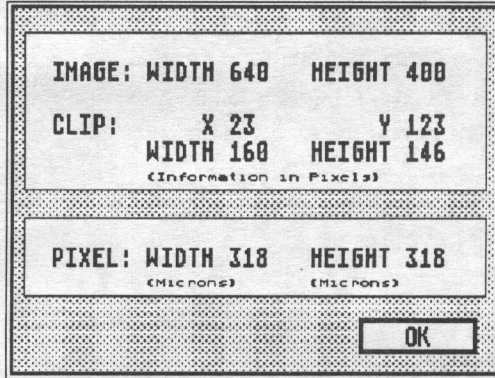
Use SHOW SIZE when you want to know the exact location and size of your clipping box. It also gives you the size of the image file (how many pixels) plus the exact size of each pixel. This information is helpful, for instance, when you want to separate an image into several exact pieces, like a puzzle.

Edit Menu

```
┌─────────────────┐
│ Edit            │
│ Pen          ⌘P │
│ ~~~~~~~~~~~~~~~~ │
│ Invert Image ⌘I │
│ Clear  Image ⌘C │
└─────────────────┘
```

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Pen [Edit] *P

Use PEN when you want to edit an image pixel by pixel. There are four different line widths, controlled by the function keys F1-F4. F1 is the narrowest line and F4 is the thickest.

To edit an image follow these directions:

1   Point to the edit menu. The edit menu drops down and displays these choices: PEN, INVERT IMAGE, NEW IMAGE.

2   Click on PEN with the left mouse button. Your pointing arrow has now become a cross-hair pointer.

3   Press the left mouse button and, while holding it down, move mouse slowly. It will draw a black line wherever you move the mouse.

4   To create a dot, simply press and release the left mouse button without moving the mouse.

To stop editing. click on REDISPLAY under the View menu.

Invert Image [Edit] *1

Use INVERT IMAGE when you want to invert the image. All areas that were previously black will now be white, and all areas that were white will now be black.

Choose INVERT IMAGE again to return the image to the original.

Clear Image [Edit] *C

Use NEW IMAGE to clear the screen of the current image. The resolution of the cleared screen is 640x800 and can be used for new images created with the PEN command.

Tips

Keep a Log of Images. It is important to keep a log containing the names of the images and other statistics, such as height and width in pixels. Below is a sample log.

Name	Source	Orig Res	Size(WxH)	Note
STIGER.IMG	Scanner	150DPI	996x1498	Full Tiger
CLIPTIGR.IMG	Converter	150DPI	900x600	Clipped Tiger

This size information is important because it will help you produce better print outs when using Easy-Draw. By noting the bit-image information plus your printer's resolution, you can "fine tune" the bit-image and its corresponding box in Easy-Draw.

With the above example, if you are printing with a 300 DPI laser printer and want a final print out to be mapped exactly into a 3" wide by 2" high area, you would save out a clipping-box area of exactly 900 by 600 pixels, from the converter (for example, CLIPTIGR.IMG).

Remember: You can press Alternate-S to display the Show Size dialogue box while in the converter.

Distorted Images

Whenever a large scanned image has been loaded into the converter and appears distorted, it may be because of insufficient free memory available. One reason this may happen is that the operating system does not always reallocate portions of memory correctly after running several applications.

If reloading the image a second time does not fix the screen display, try one of the following:
- Quit the converter, start it again, and load the image.
- Reboot the system, start the converter, and load the image.

Make it a habit to view the images after loading them before making any significant changes and saving your work. Do this by using the slider bars to pan around the full image.

SNAPSHOT UTILITY

Snapshot is a GEM Desktop accessory supplied with the Supercharger that allows the capture and saving of screens (snapshots) from your favourite GEM applications. These snapshots are saved in GEM standard .IMG or DEGAS format and can be loaded directly into the converter for editing, and then onto your Easy Draw page.

With this accessory you can capture the charts, picture, graphs, etc. that you need to highlight newsletters, reports, brochures and more.

Installing Snapshot

Because Snapshot is a desktop accessory, it must be installed on your boot up disc (the disc you start your computer with).

To install Snapshot, follow these directions:

1   Copy the file SNAPSHOT.ACC onto the disc you normally turn your computer on with.

2   Turn the computer off, wait 10 seconds, and then turn on the computer.

3   Go up under DESK and find Snapshot installed.

Note: Easy Draw owners should install Snapshot on their Master disc. Single-sided owners will have to remove the fonts which they do not use (either the colour or monochrome) to make room for this accessory.

Hard disc owners: install Snapshot on your hard disc boot up floppy disc.

Using Snapshot

To use Snapshot while in any GEM application, follow these directions:

Note: Monochrome owners should always save their screens in .IMG format; however, should you choose to save screens in

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Degas format you must load them into the converter and resave them in .IMG format before loading them into Easy Draw. Colour owners MUST save their screens in Degas format, load them into the converter and resave them in .IMG format. Although Snapshot offers .IMG format to colours users, it saves in colour .IMG format which is not supported by Easy Draw at this time.

1   Go under the Desk menu and click on Snapshot. An alert box will appear that looks like this:

```
┌─────────────────────────────────────┐
│  ┌────────────────────────────────┐  │
│  │     SNAPSHOT™ V1.00            │  │
│  │   Screen Capture Utility      │  │
│  │   Copyright © 1987,1988       │  │
│  │      Migraph, Inc.            │  │
│  │   All Rights Reserved.        │  │
│  │  ┌─────┐  ┌──────┐  ┌───────┐ │  │
│  │  │.IMG │  │Degas │  │CANCEL │ │  │
│  │  └─────┘  └──────┘  └───────┘ │  │
│  └────────────────────────────────┘  │
└─────────────────────────────────────┘
```
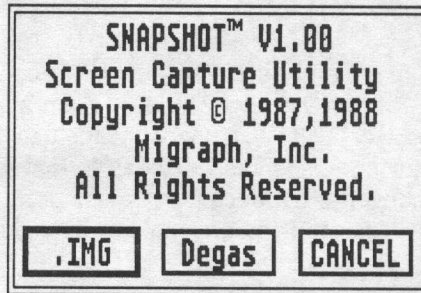
It offers you these choices:

.IMG - Click on this box to save a portion of the screen in .IMG format.

Degas - Click on this box to save a portion of the screen in Degas format.

Cancel - Click on this box to cancel the transaction.

2   Click on Degas. Your mouse pointer will now turn into a crosshair cursor.

3   Move the mouse to the top left-hand corner of the area you wish to capture.

4   Holding the left mouse button down, drag the mouse until the box is the size of the area you want to capture. Your snapshot will appear in reverse video, and then a File Selector box will appear.

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5 At this point you can either enter a filename for the snapshot and click on OK, which saves the snapshot.　　OR

Click on cancel, which cancels the snapshot. Your snapshot will now be saved in Degas format. For monochrome users, should you wish to save the snapshot in .IMG format, choose .IMG in step 3 above, instead of Degas.

For more information on using the File Selector box, see the section on saving images in the converter tutorial.

Tips

Once you have captured and saved a snapshot, you should always load it into the converter for viewing. There you can edit it a pixel at a time, and resave part or all of the snapshot for use in Easy Draw. One advantage of saving snapshots in Degas format is that they can be enlarged in the converter by loading them using the Auto-Mapping 2x2 option. This enlarges the image, making it easier to edit on a pixel basis.

Many times you will have a snapshot in Degas format that is smaller than a full screen. When a small snapshot is loaded into the converter, always use the Save Clip IMG command to save it, after selecting the image area with the clipping box. The reason for this is that even though the image is small, if you use Save Full Image, It will save the whole screen (the image plus the white area), so that when it is loaded into Easy Draw, the image plus the white area will appear.

Images saved in, .IMG format with the snapshot utility are un-compressed. Load the files into the converter and resave them.

This saves them to compressed format which will take up less space on the disk.

To capture zoomed-in or enlarged portions of objects in Easy Draw, use the Snapshot Utility while zoomed-in in Easy Draw. Because Easy Draw always prints out at Zoom Normal, the Snapshot Utility provides a way to capture close-up details. Be sure to load snapshots

into the converter and resave them out. Then, print the .IMG file directly through OUTPRINT or reload into Easy Draw for placement on a page.

SOFTWARE

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GST

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