

Amazing Graphics

We had the Amiga set a table filled with graphics appetizers and visual delicacies to give you a taste of form, shape and color. Bon appétit!

Somehow, "amazing graphics" doesn't say enough about the Amiga's visual capabilities. It's like saying Bach was an audio engineer or Shakespeare was just a manipulator of text. But the Amiga *does* have amazing graphics and when reading about it, you'll encounter that phrase a number of times.

Since the Amiga's graphics are such a predominant feature, there will be numerous references to the 4,096 different colors available; the 640 × 400, 640 × 200 (with 16 colors) and the 320 × 200 (with 32 colors) resolution modes; the seven layers of sprites; and the dedicated graphics chips that make high-speed animation possible (without using any of the 68000's impressive speed). And there'll be talk of bit blitters, NTSC video output, frame grabbers and gen lock add-ons (planned for the future).

But what does all this mean to the user in the home or office? (How many colors do you need for a database or spreadsheet, and just what is a frame grabber anyway?) It all boils down to—you guessed it—amazing graphics. Take the pieces a few at a time.

First, 4,096 colors. That doesn't take much explaining. There are only a few personal computers anywhere that can match that number. You won't be able to put all 4,096 colors on the screen at one time with the basic Graphicraft package, but you'll be able to put any 32 of those colors on the screen at once. And with a small amount of programming wizardry, you can expect to see commercial programs using hundreds (maybe thousands) of colors at one time. (A quick note: Island Graphics, the company that developed Graphicraft, is working on some advanced graphics programs that will make *all* other graphics programs look like paint-by-numbers.)

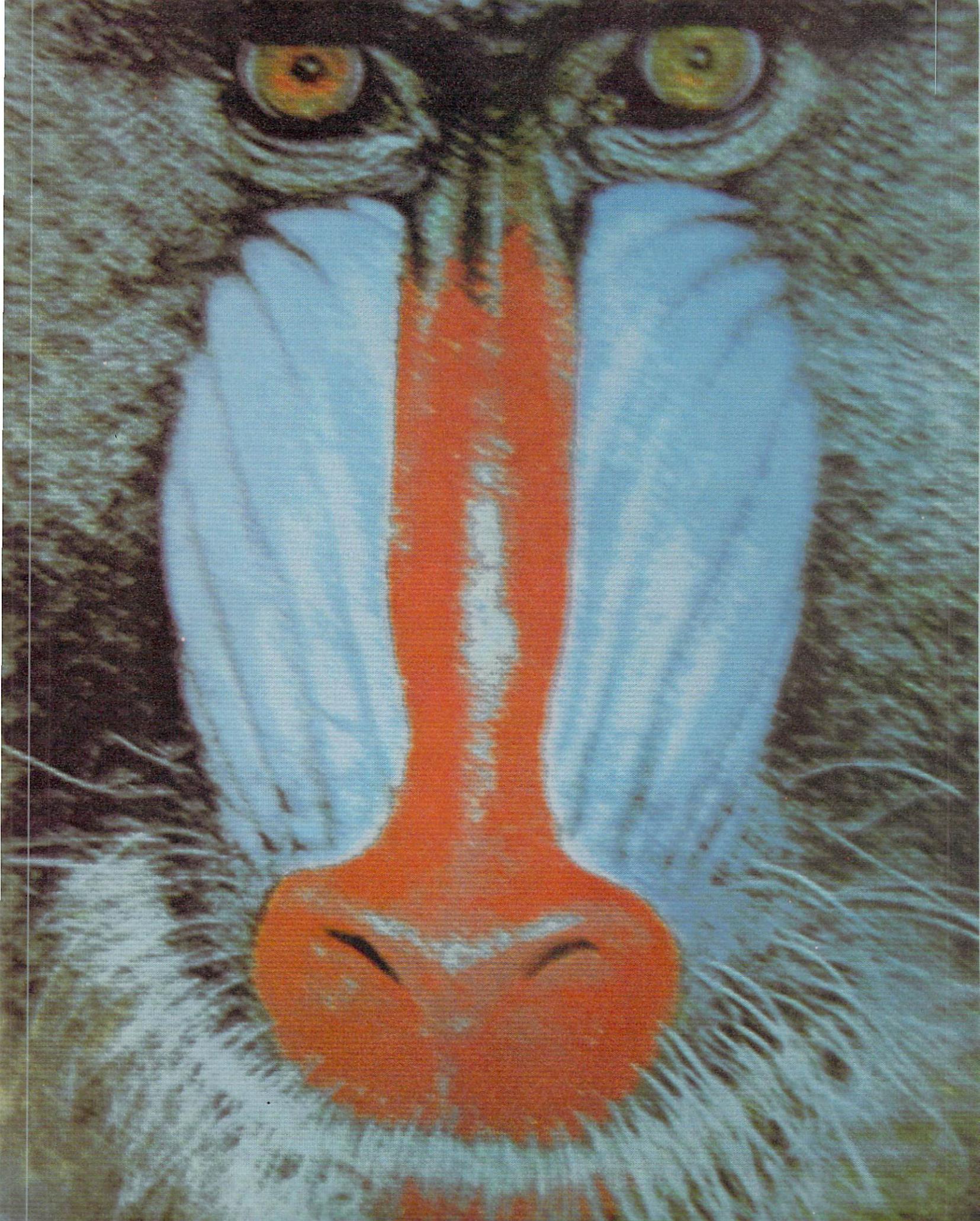
What about the resolution modes? In the case of graphics, the higher the resolution—the more pixels in a matrix—the better. A pixel is a dot on the screen; it

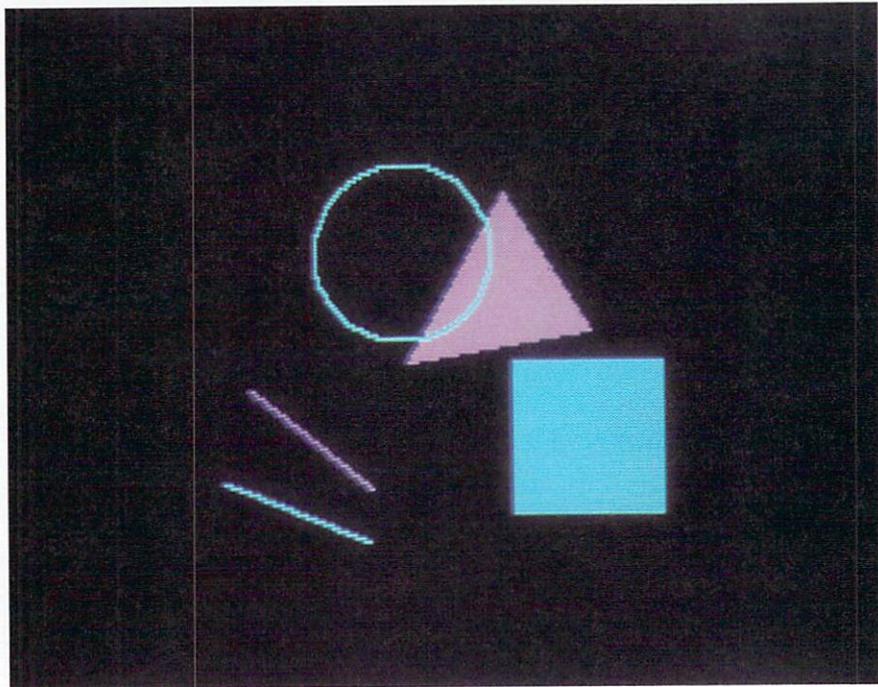
can be the size of a period or larger. It's the difference between drawing with a fine-point pen or drawing with a magic marker. And, by the way, low resolution on the Amiga (320 × 200) is the highest resolution achievable on most other home computers.

What about sprites? A sprite is a block of graphics information that the computer treats as a single unit. For instance, if you want the letter A printed on the screen, the computer goes to a *master list* of characters, pulls out the pattern of dots necessary to form the letter and puts the whole block pattern on the screen. A sprite is just a larger version of a character-block pattern. The advantage is that you don't have to keep drawing the same object over and over each time you want to move it around the screen. You just instruct the computer to draw it in a particular place, then issue movement commands to place it wherever you want. The result is faster and smoother animation.

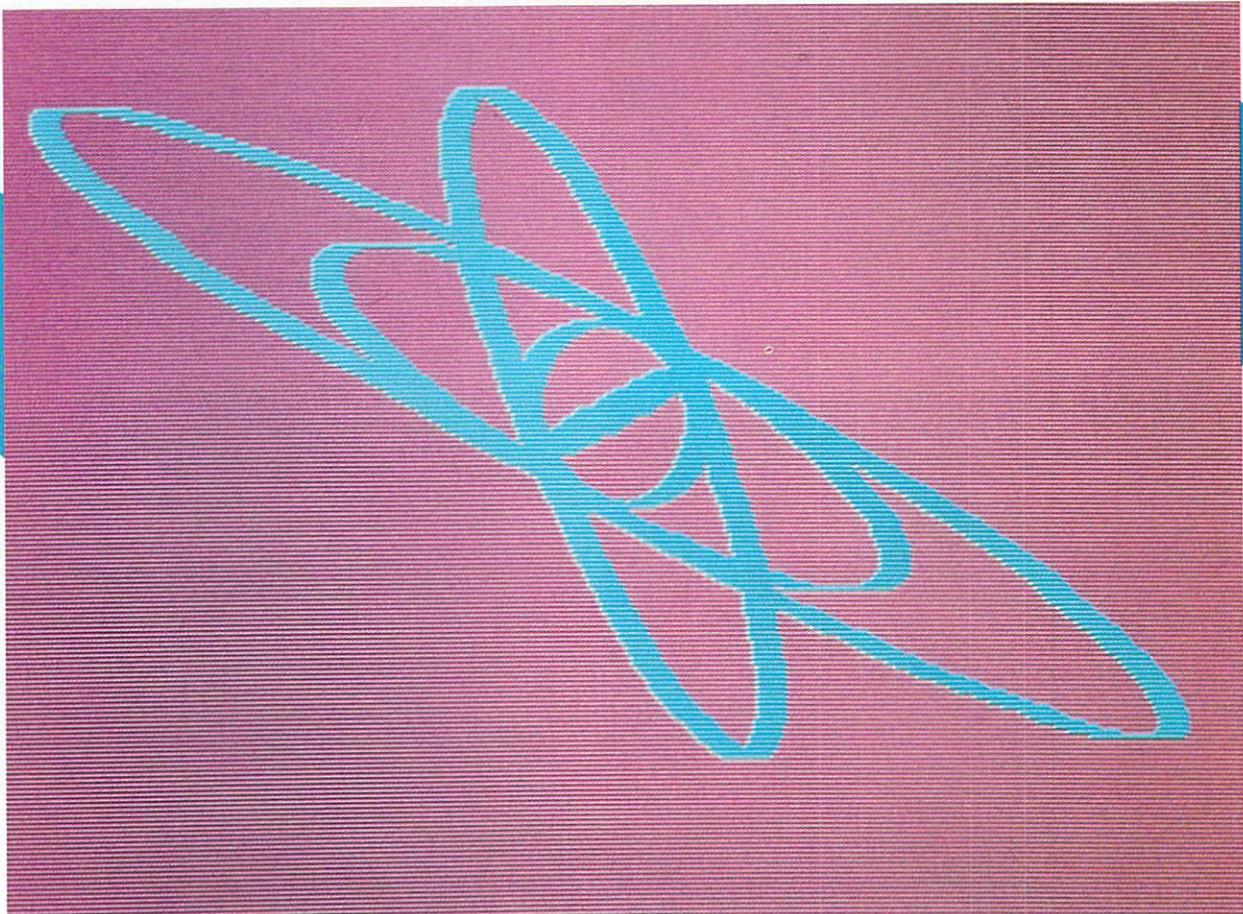
But that isn't where the idea stops. Sprites are usually one size when defined (or added to the master list) and even though the computer can expand the size of a sprite vertically or horizontally, what happens when you want something larger and more detailed? You could combine sprites to form larger images, but the Amiga is more versatile, letting you define any size area as a block, which the computer treats as a sprite, so you can move it around on the screen as you like. To accomplish this feat, the Amiga uses something called a blitter. To put it simply, the blitter moves blocks of information around in the computer very quickly and bit by bit, if you wish.

On top of these sprites and blocks and bit blitters, there are priority levels (where sprites can pass in front of or behind other sprites) and even transparencies (where you can see through sections of sprites and view objects that pass behind them). All of these special effects are done without bothering the 68000 chip, so the 68000 can worry about other tasks, such as calculating the angles of refraction in an optical modeling simulation; the graphics chip will handle the actual display of a lens being rotated through intersecting, multicolored laser beams.





Previous page: The Mandrill. A digitized photograph showing the range of colors and detail possible on the Amiga. Above: Basic circle, triangle, square and lines. Right: Any thickness of line, brush stroke or pattern can be combined with various graphic tools such as ellipses, curves, circles, etc.



The last few add-ons mentioned above, the gen lock and frame grabber, wouldn't be possible if the Amiga weren't up to NTSC standards (NTSC is a television standard in this country). A gen-locking device lets you mix video signals (don't ask me how), and a frame grabber can take a single video frame, digitize it and feed it into the computer. So what? So take your home video tape recorder and superimpose graphics and titles over your newest product as it rolls off the assembly line, or take a single frame of your Aunt Maude, draw a mustache on her (or airbrush it out if she already has one) and print the results on your printer.

Much Ado About...Much

All these fancy features mean that, graphically, the Amiga can do it—sharper, faster, easier, in more detail, with more colors and in more ways than any other single computer ever made. If you just want to draw pictures, the Amiga gives you more options than any other personal computer. If you want to see outstanding animation, the Amiga, right out of the box, will out-perform anything in its class.

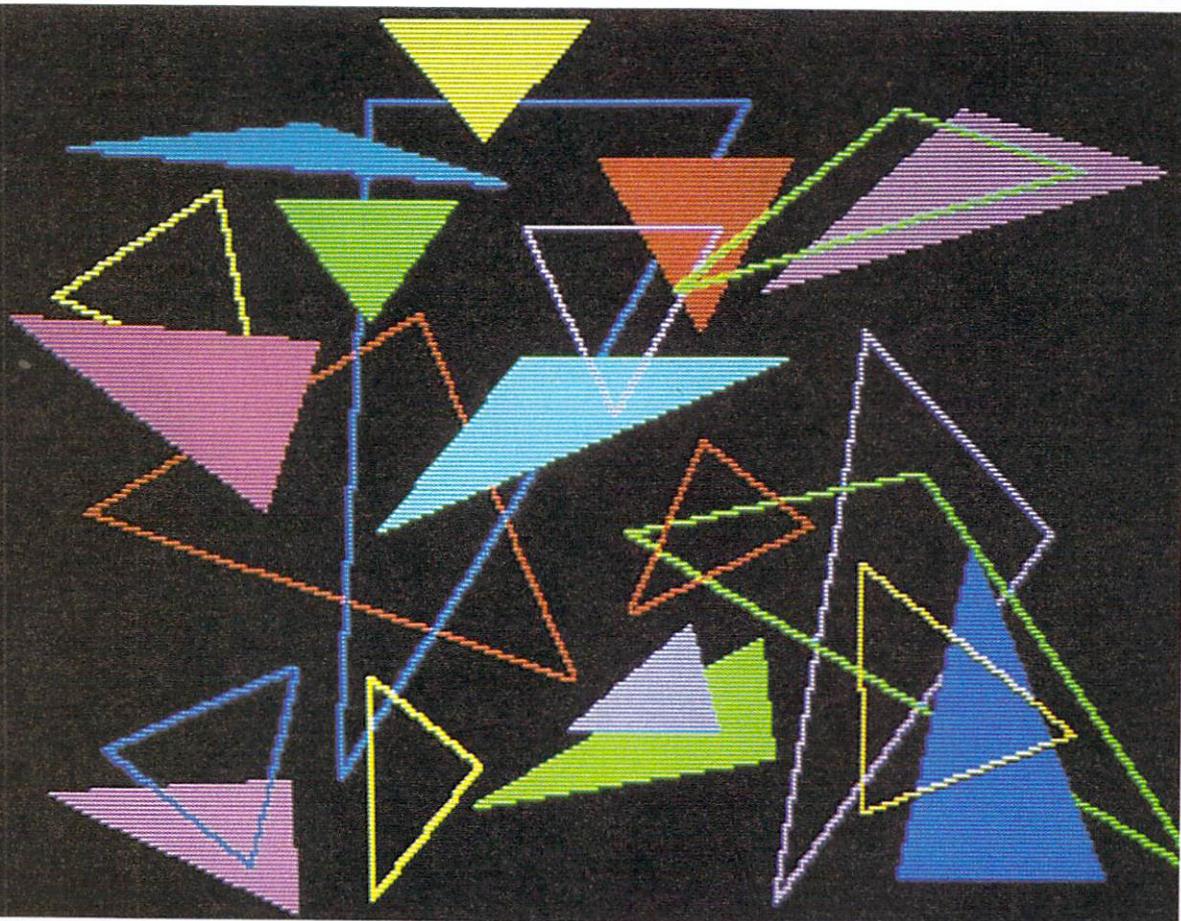
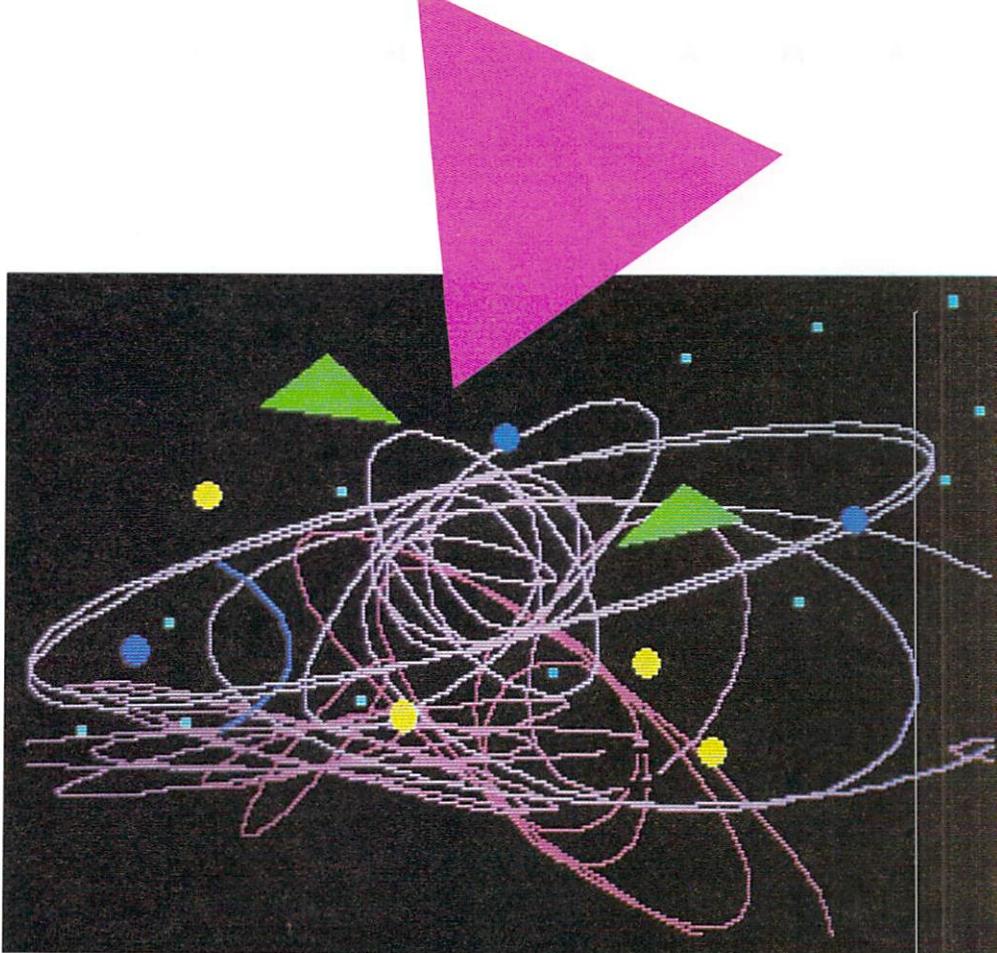
Airsickness bags included with flight simulator software? Exploded, 3-D, color pie charts? No problem.

How about a videotaped walking tour of an assembly line? You can freeze the frames, label items with clean arrows and descriptions and even add graphics. Print out these frames and include them in a report or training manual. Why do you need graphics capabilities in a business? Well, how much do you want to show that can't be done on a normal typewriter? How much time or money have you spent on training, charts, graphs, presentations, logos and designing?

Create your own ads, logos, charts, graphs, illustrated reports, music videos and store displays. The Amiga is a design processor for visual images when words aren't enough.

These pages are just the tip of a very large, very colorful iceberg. All done on an Amiga. All designed to show you a sampling of the graphics possible on this machine. In later issues, we'll continue to look at and explore the Amiga's graphics in more detail, but to start, we thought we'd just touch on some of the features. Let the Amiga do a little showing off for the cameras. Flip a page or two and see what we mean.

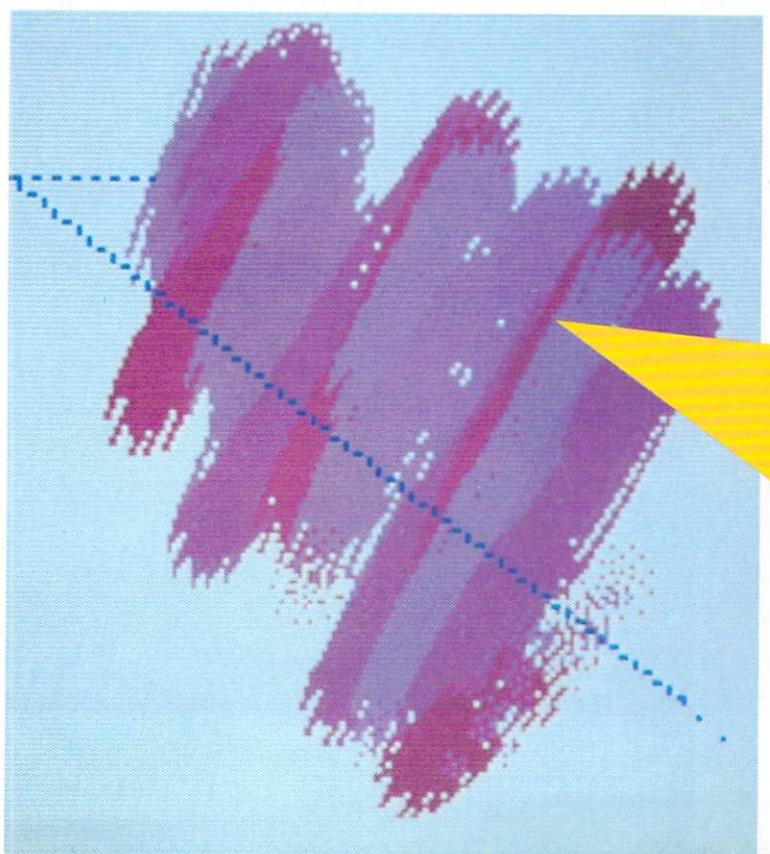
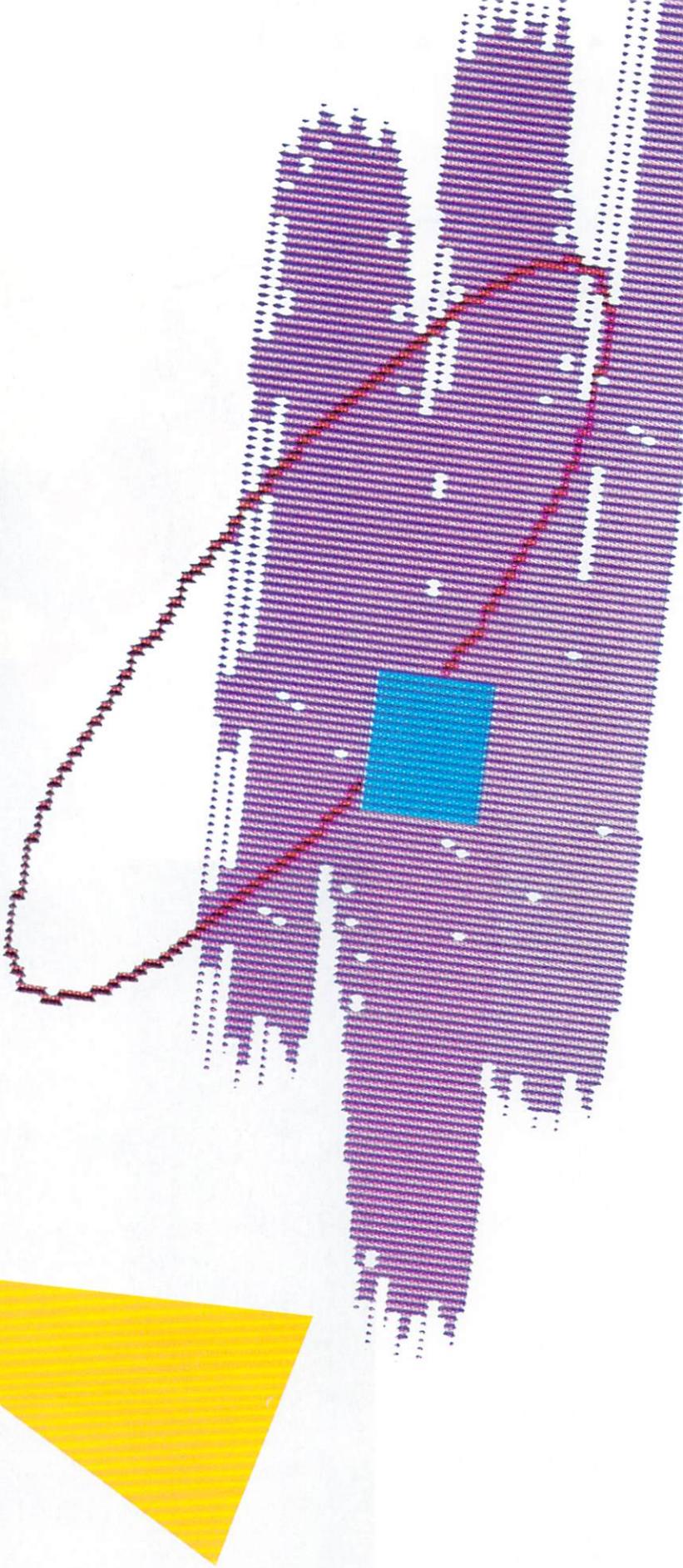
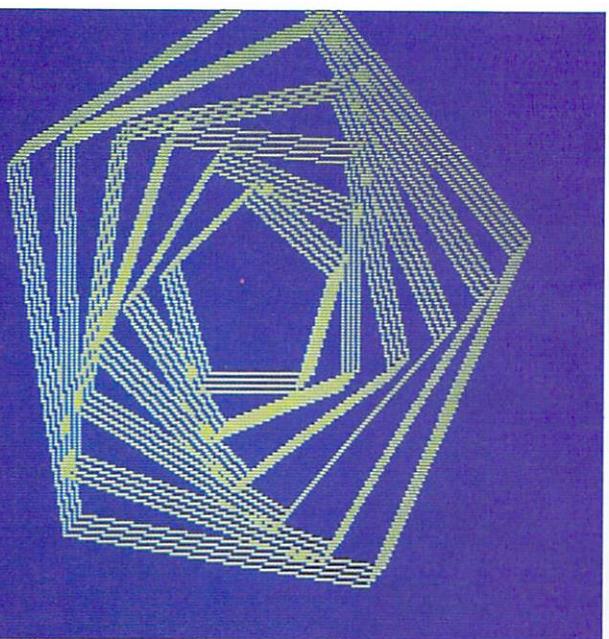
We don't really need to say it again, but what the heck. The Amiga has amazing graphics! ■

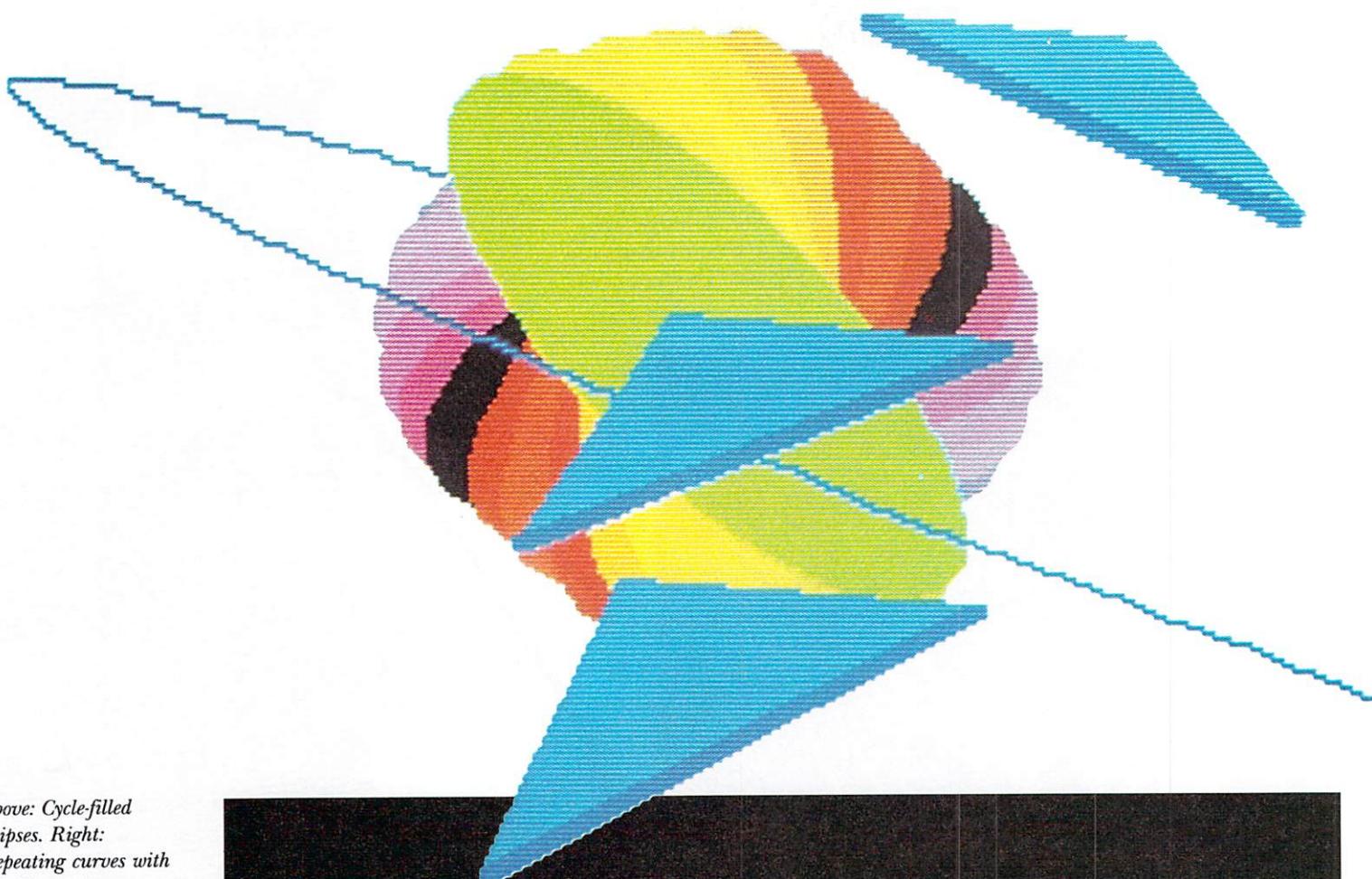


Above: Example of various brushes, freehand drawing and ellipses showing thicknesses and shapes. Left: Linear and filled triangles.

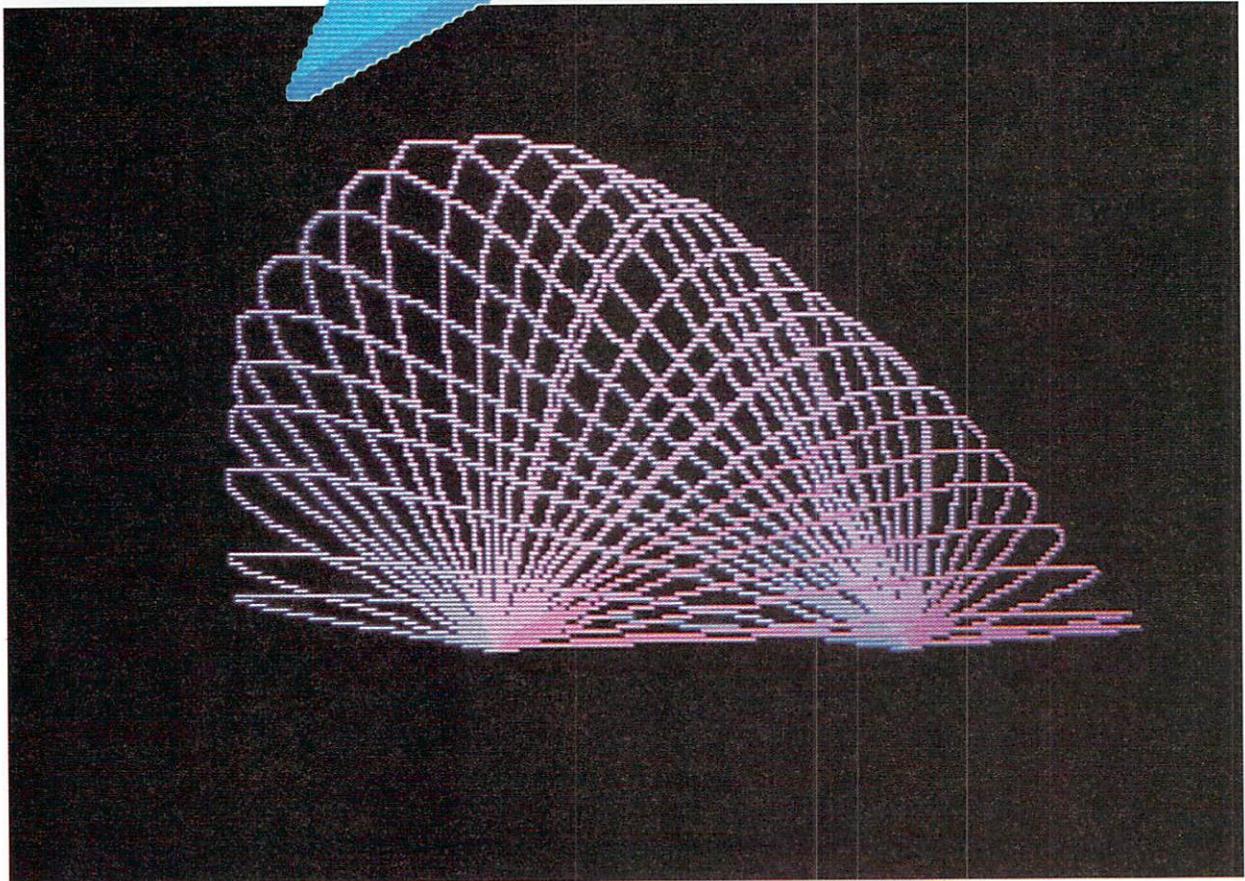


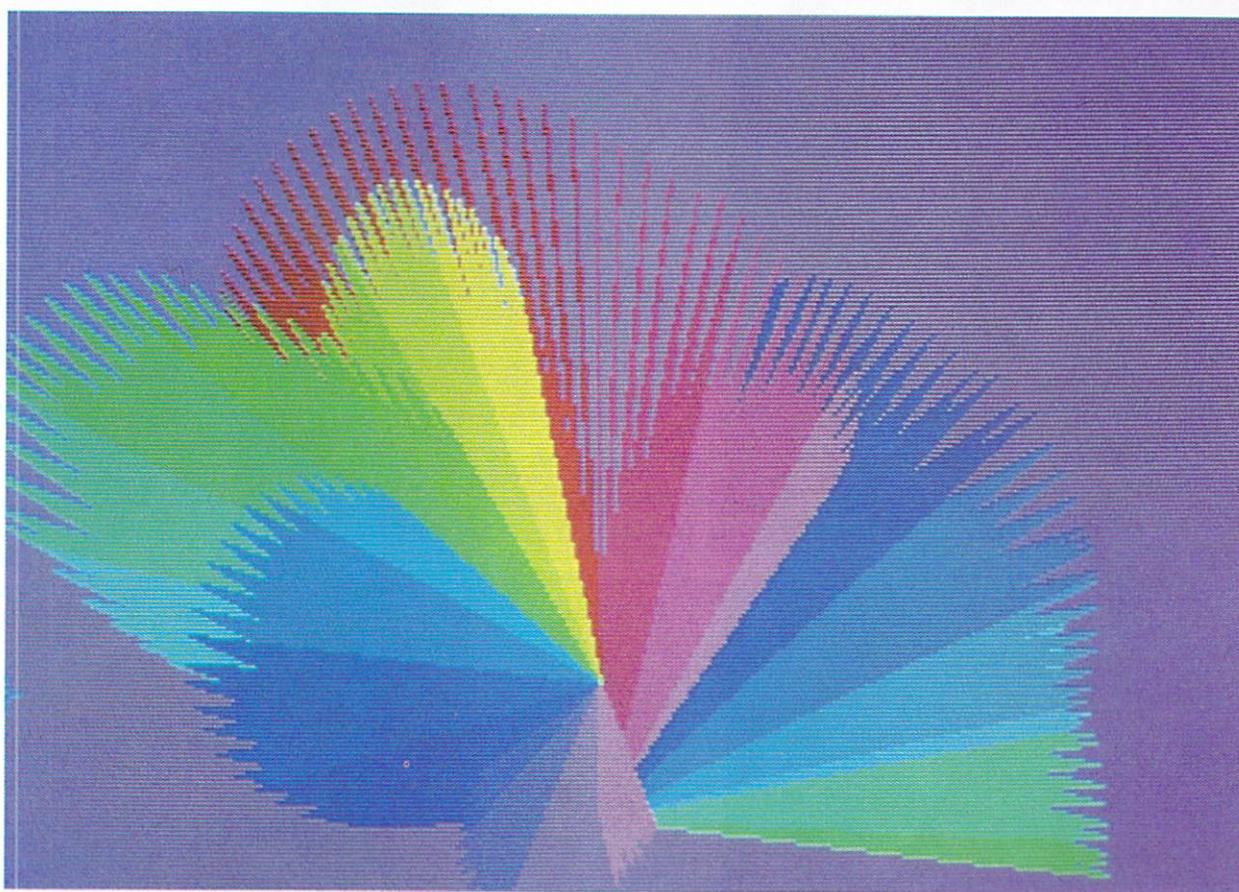
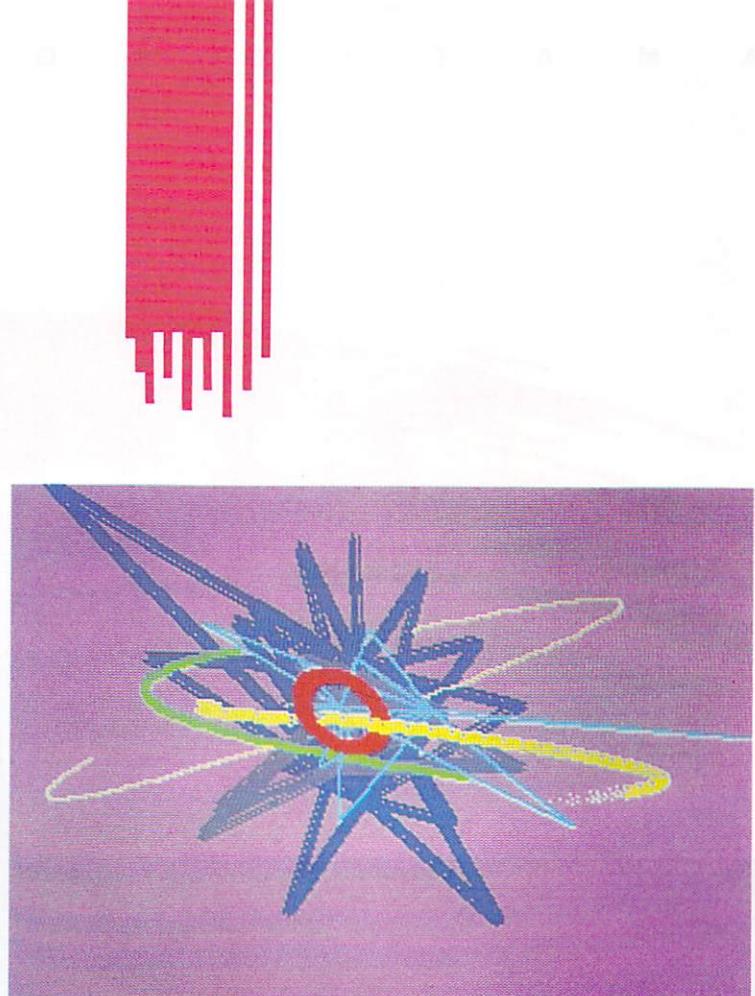
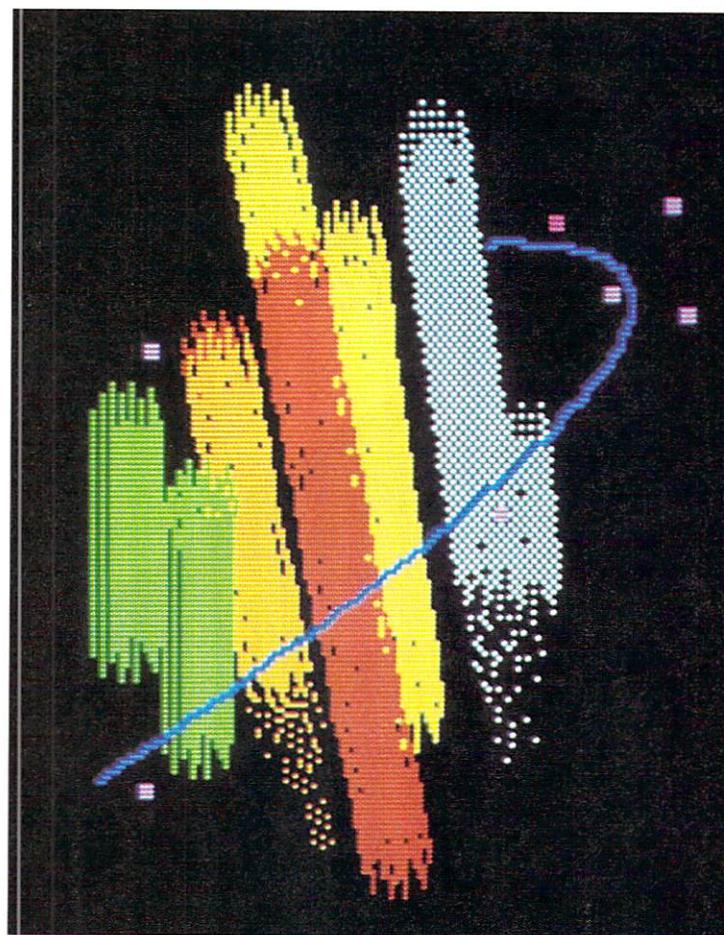
Right: Freehand color cycle using largest brush stroke. Opposite page, top left: Pentagon done with a three-dot brush. Opposite page, bottom left: Color cycle airbrush with dotted line.





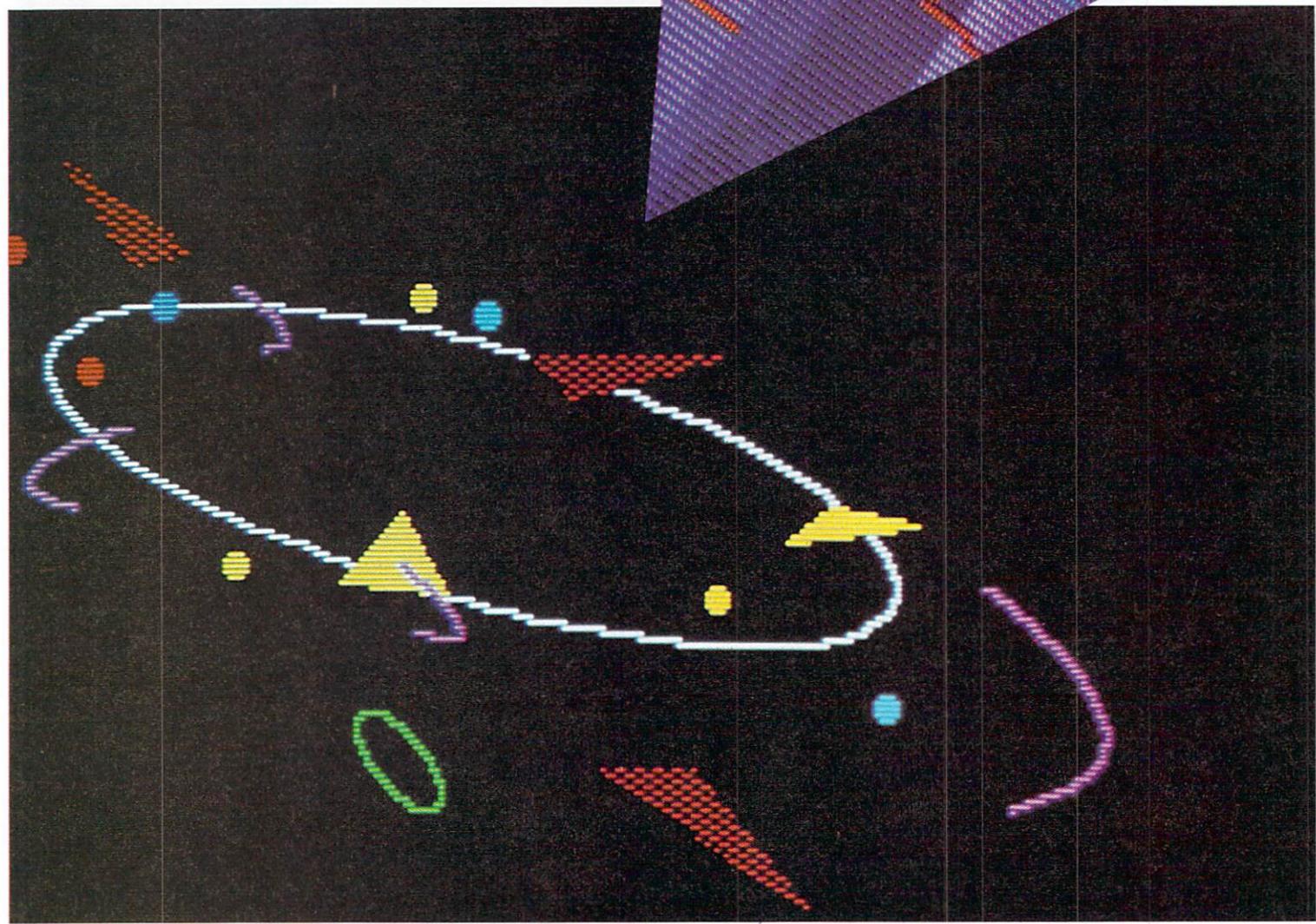
Above: Cycle-filled ellipses. Right: Repeating curves with two fixed points.

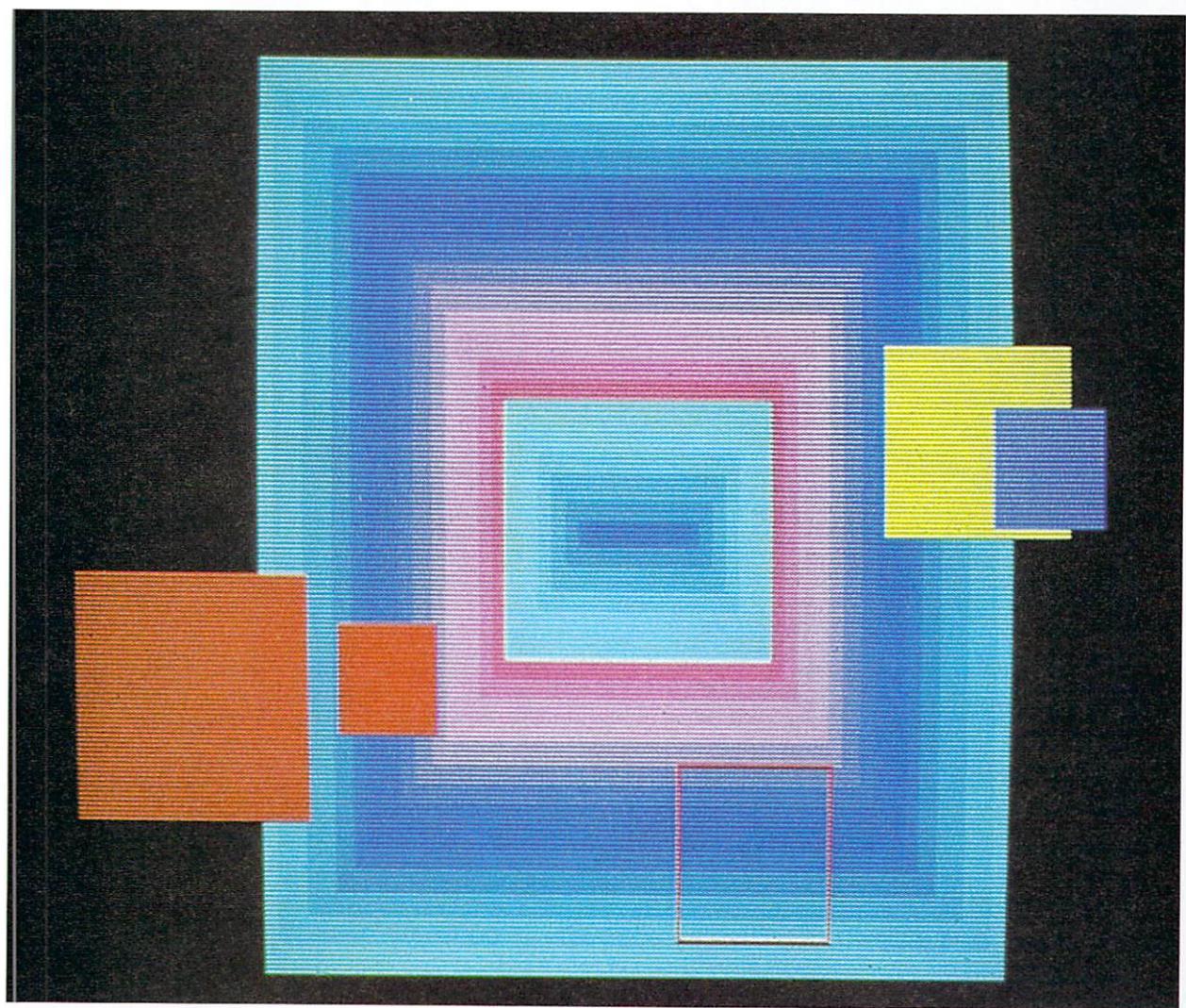
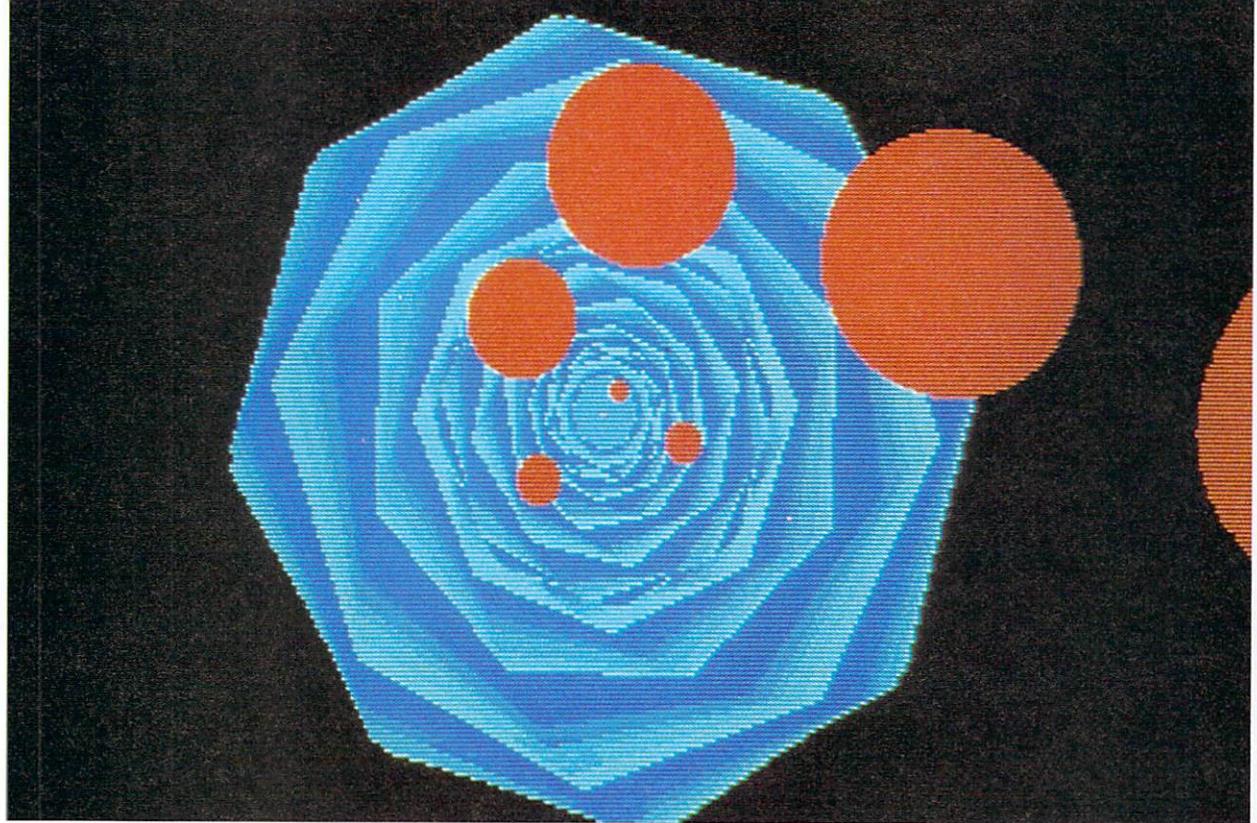




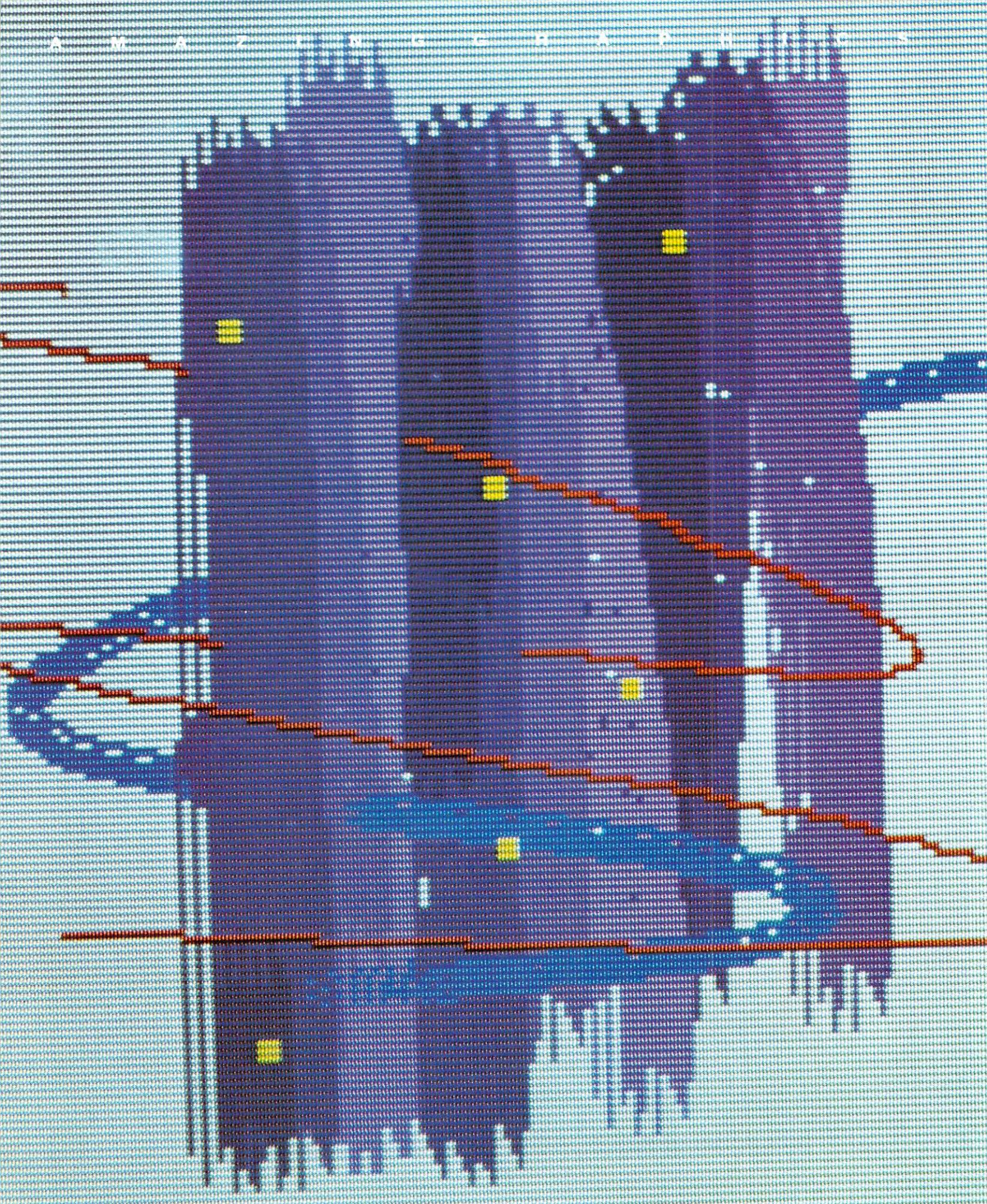
Above left: Largest airbrush strokes with selected colors. Above right: One-point fixed triangles using small airbrush stroke. Left: One-point fixed color cycle filled triangles.

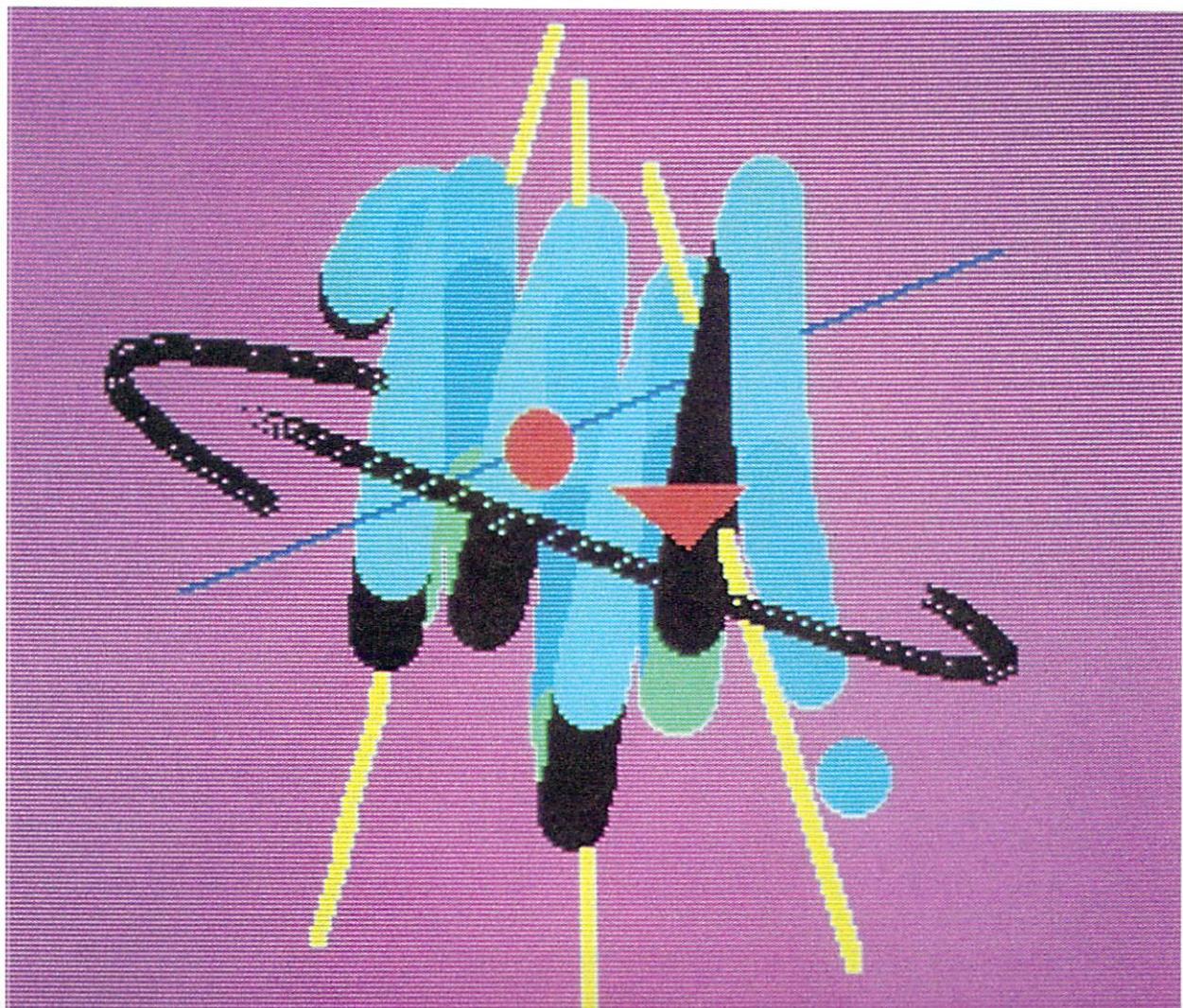
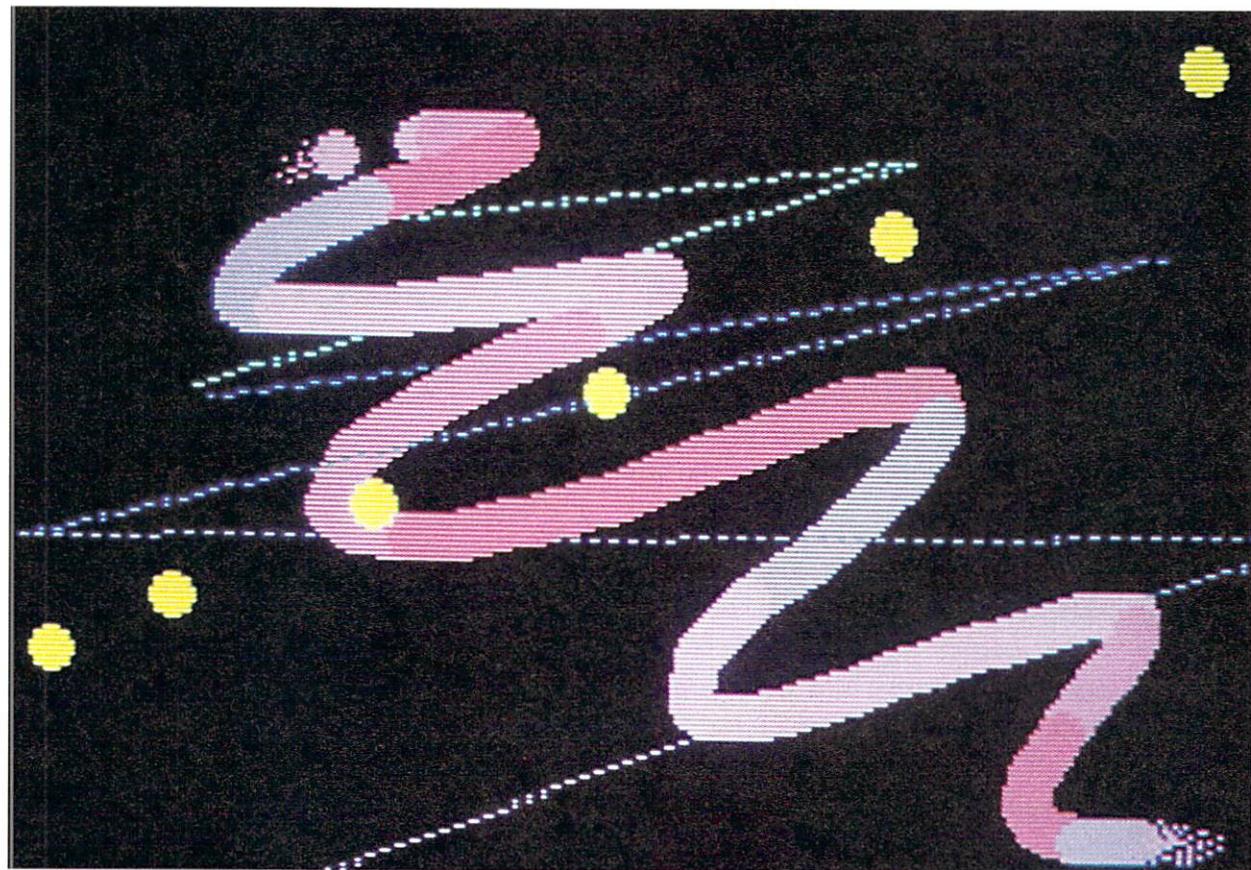
A M A Z I N G R A P H I C S





Opposite page, bottom:
Beginning to put it all
together. This page, top:
Octagons with shades of
blue color cycling. Left:
Color cycle filled
rectangles with solid
squares and linear
rectangle.



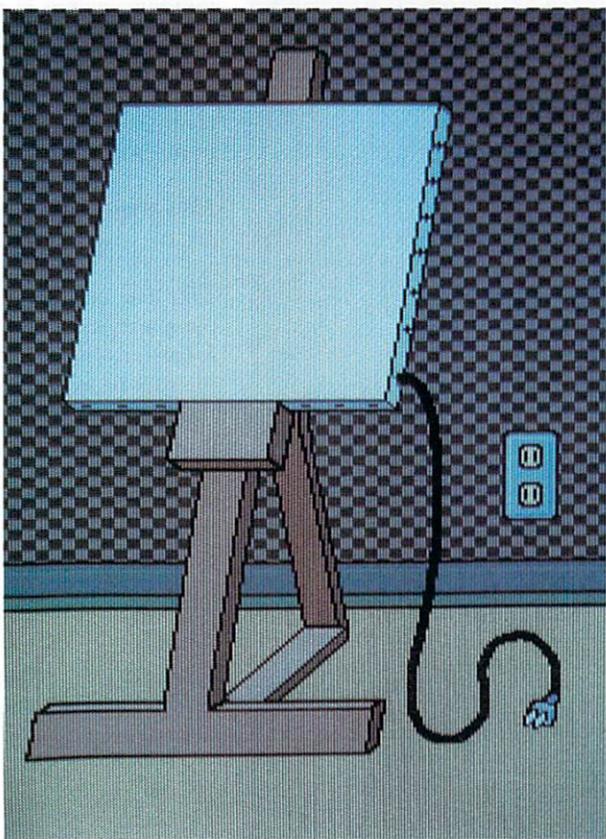


*Opposite page:
Overlapping various
brush strokes. Above:
Freehand drawing with
the largest brush stroke
and dotted line.*



Digital Canvas

The Amiga computer is an impressive graphics tool, but it is still just another computer until it's put into the hands of an artist. Digital Canvas is designed to be a showplace for Amiga artists. For this premiere issue, we convinced Jack Haeger, Director of Amiga's Art and Graphics Department, to do some showing off for us.



Jack is originally from Chicago, Illinois, where he spent two years at Northern Illinois University before going on to get his BFA degree in painting from The School of the Art Institute of Chicago. While attending SAIC, he did some freelance illustrating for *Chicago* and *Playboy* magazines. Through *Playboy*, he found out about a Chicago-based company called Williams Electronics, that was looking for a computer artist. Even though he had no experience with computers, Jack took a job there working on video arcade games. His first arcade game project, Sinistar, was ranked number one in the nation for three straight months. He later worked on Star Rider, Williams' first laser disk arcade game.

Inspired by the personnel and the machine's promise, Jack took a chance in 1983 and moved to California to work at Amiga, which, at the time, was only a small start-up company. He has been there ever since.

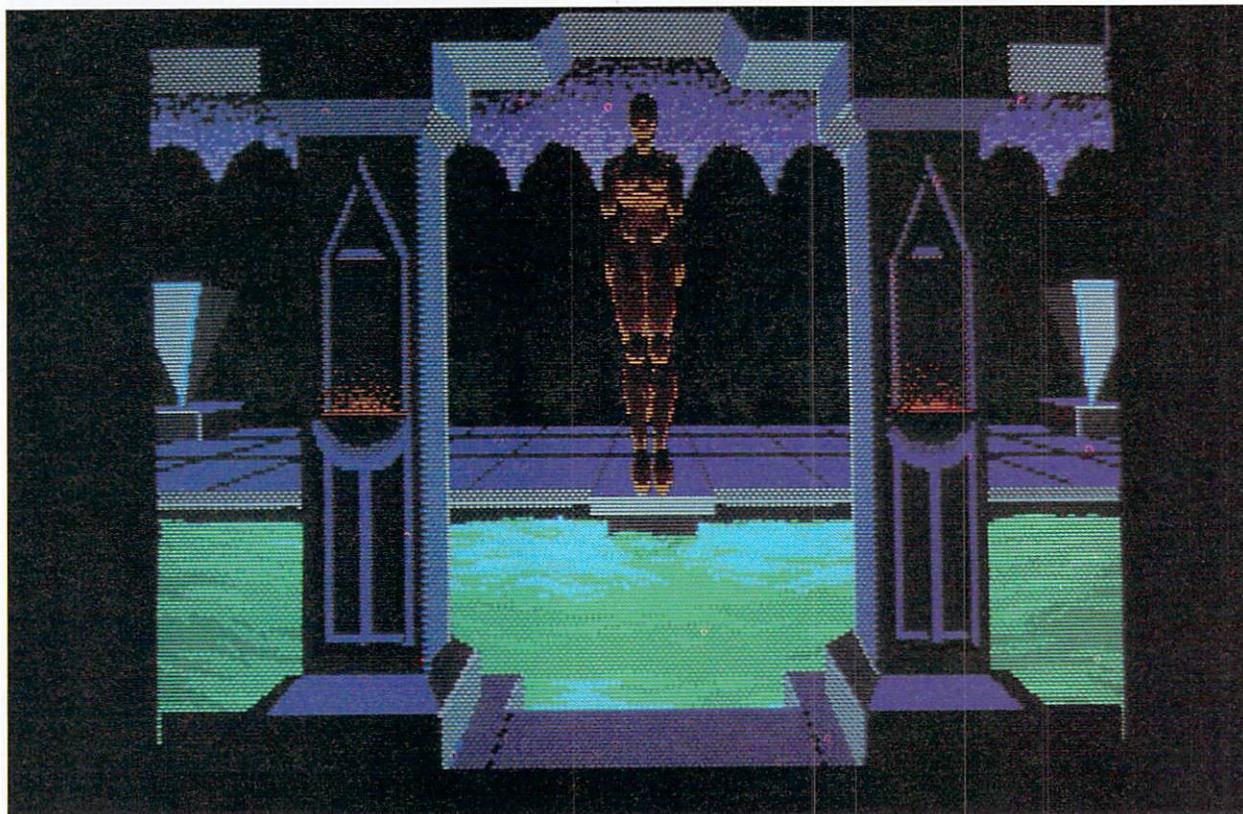
About his own work, Jack says "Up to this point, a lot of computer graphics has been qualified as good simply because it was done on a computer, but that isn't enough. In my mind, it must first stand on its own as graphic art and secondarily as work done on a computer. You can't just be in love with the media for its own sake. The images must fulfill the fundamental criteria of good design and aesthetics. A sense of humor is also important. I think that the computer is an extremely dynamic tool for creating and manipulating graphic art, and the impact that the computer will have on the graphic world is going to be tremendous."

Take a look at some of Jack's work, and you'll see just what an artist can do with the right tools. ■





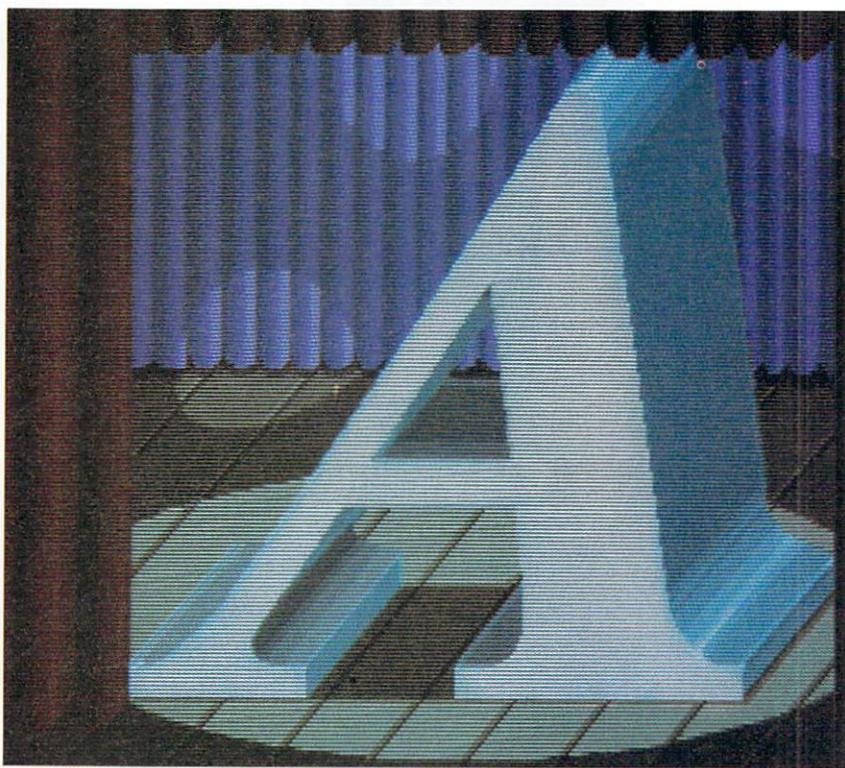
Previous page: "Self-Portrait." Top left: "Robocity." Top right: "Four-Byte Burger." Right: "Temple." Opposite page: "Girl with a Red Beret."





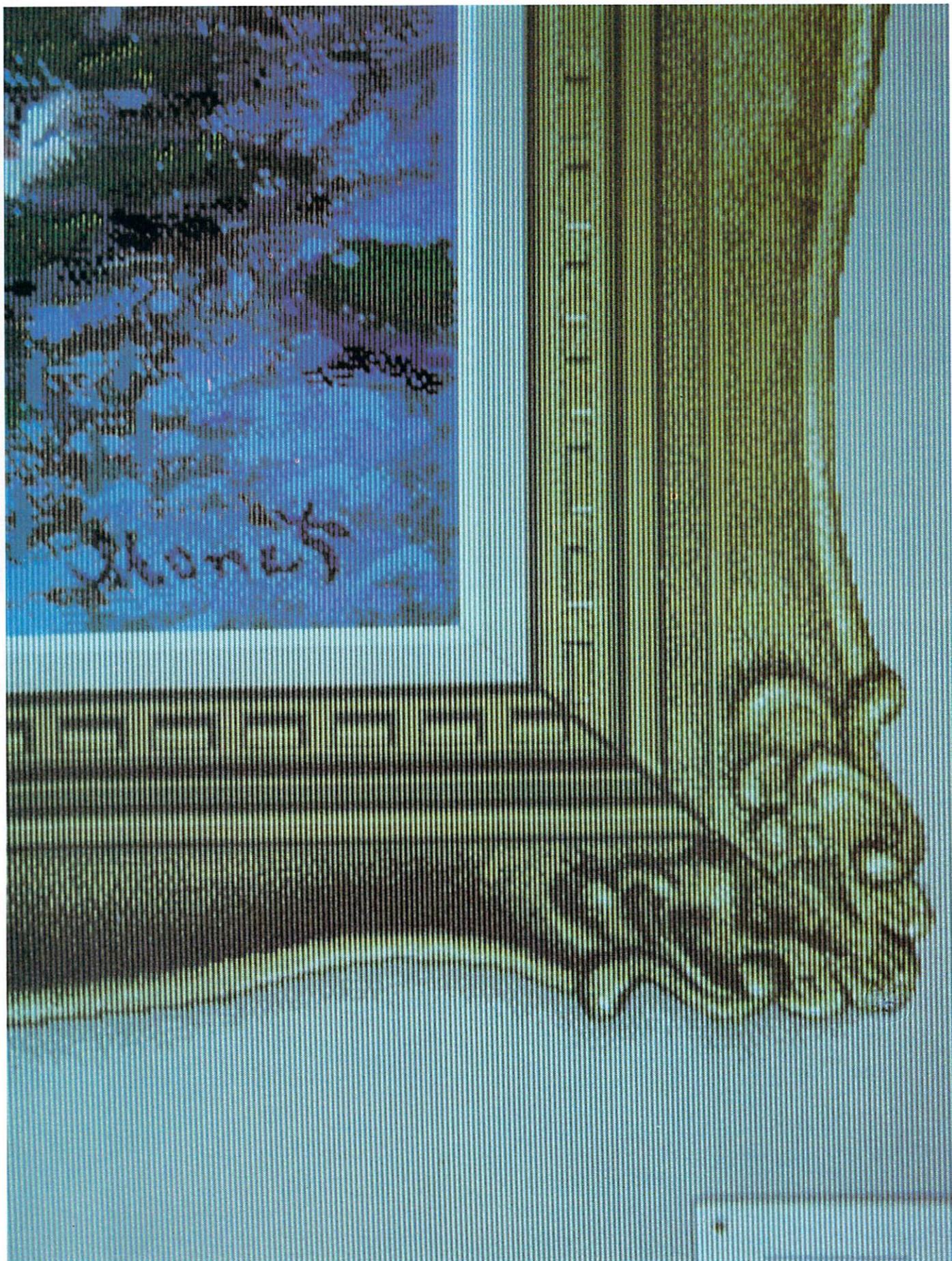
"A lot of computer graphics has been qualified as good simply because it was done on a computer, but that isn't enough. . ."





*Opposite page: "Music."
Top left: "Shapes." Top
right: "Introduction to
Amiga." Left: "Palette."*

D I G I T A L C A N V A S



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