



# Tech Info Library

## Macintosh: Desktop Media & the Making of Pencil Test (1 of 2)

Revised: 8/23/89  
Security: Everyone

Macintosh: Desktop Media & the Making of Pencil Test (1 of 2)

=====  
This article last reviewed: 18 August 1989

TOPIC -----

Companies who want to implement computer-generated video systems for their training and PR departments wonder whether to go with the Macintosh open, modular system or with an integrated system.

Some have seen non-Apple solutions that include a single, Amiga-based package with automated, three-dimensional, frame-by-frame generation of NTSC video sequences. The package also handles the problems of hiding window borders/title bars, genlocking, and so on.

Most have seen the "Pencil Test" video and feel that the quality of this video is acceptable, but they were told from one of the other vendors that Apple invested incredible resources into creating "Pencil Test" and that the process used for "Pencil Test" was very time-consuming and inefficient.

What was the exact process for the creation of "Pencil Test"? How many people worked for how long to produce the video?

DISCUSSION -----

There are advantages and disadvantages both to the totally integrated systems and the open modular systems. Totally integrated system's advantages include having hardware and software tied directly together and having one place to get support. Disadvantages include being locked into the one company's point of view about how to do things, working only with their tools, and, often, being locked into that company's software. An integrated solution on non-Macintosh systems is most likely pieced together from a variety of third-party products.

Open module systems offer one of the main advantages of Macintosh: integration. With the Macintosh consistency of user interface, different modules from different publishers have the familiar user interface. The best drawing program can be used with the best animation program while using the best video card.

There are standard graphics file formats that are used by animation applications. Also, graphic images can be copied and pasted among most Macintosh applications. For example, if a corporate logo is designed for publishing in Macintosh publishing programs, that logo can be brought into the Macintosh animation programs. The logo also can be used in programs for making 35mm slides or overhead transparencies. You don't need to redraw it or convert from one computer format to another.

Another advantage of having a modular system is the hardware. The current standard for graphics applications is 8 bits of data for each pixel or 256 colors at one time. Many hardware and software companies are now working on 32 bits of data for each pixel or more than 16,000,000 colors on screen at one time. In a modular environment, as technology progresses, the animation environment can progress by updating the portions that are necessary--not changing to something entirely different.

The basis of the MacroMind system is VideoWorks. VideoWorks II and Director has the ability to hide window borders, title bars, and menu bar. MacroMind has also worked with other graphics companies to establish a standard file format for the exchange of animated sequences. This format is called PICS.

Aegis offers Showcase F/X for doing animated titles.

Certain Macintosh video cards, designed for outputting to NTSC, correctly handle all the issues concerned with placing Macintosh graphics on video tape, like overscan and genlock. The AST video board, the Mass-Micro Color-Space II, ComputerFriends TV Producer, TrueVision NuVista cards with VIDI/O Box, and RasterOps ColorBoard 64NC all are boards that handle the proper placement of the graphic images for full-screen coverage and genlock.

There are other methods for moving Macintosh graphics to video tape. For example, RGB Technology has RGB/Videolink 400, 1400, and 1400A. These are video scan converters for the RGB output of the Macintosh II. One issue that normally surfaces with the NTSC boards is NTSC flicker. Flicker occurs because a television image is created by scanning alternate lines. When a computer graphic image is only one pixel wide, it is put on the screen only half of the time. This is what causes flicker. Video scan converters eliminate this interlace flicker.

For a Pencil Test-quality production, any system from any vendor requires similar amounts of time and resources to be spent. It is a simple equation in the computer animation business: Quality = Time + Resources.

Amiga animation and Pencil Test do not compare well. The Amiga solution uses 256 colors/8 bits per pixel, while Pencil Test uses 16,800,000 colors or 24 bits per pixel. Doing the shading used in Pencil Test on an Amiga results in a palette of a few main colors with many shades of those few colors. Also, be aware that many of the video products for the Amiga work at a resolution of 320 x 200 pixels. This is a fairly low-resolution graphics when compared to the Macintosh solutions using a minimum of 640 x 480 pixels. Using a product like RGB/Videolink 1400A, it is feasible to use pixel counts as high as can be purchased; that is, 2048 x 1024, 1024 x 1024, and so on.

Of interest, the developers of the top Amiga animation products are in the process of moving their applications to the Macintosh II. Many have completed the move.

Copyright 1989 Apple Computer, Inc.

Tech Info Library Article Number:4250