

THESIS PROJECT

DECEMBER, 1990

**A TRAINING MODULE
FOR THE INTEGRATION OF TEXT, SCANNED GRAPHICS,
AND COMPUTER-GENERATED ARTWORK
INTO A PAGE LAYOUT PROGRAM
ON A MACINTOSH DESIGN SYSTEM**

by

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Certificate of Approval

Master's Thesis

This is to certify that the Master's Thesis of

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With a major in Graphic Arts Publishing
has been approved by the Thesis committee as satisfactory
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and Computer-generated Artwork into a Page Layout Program on a Macintosh
Design System

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Abstract

The purpose of this study is to develop a training module for integrating text, artwork, and graphics into a page layout program. Currently, the information for successful integration must be referenced from several sources. By having the key elements of integration in one volume, users attempting to layout and/or design a publication using these programs will be able to proceed quickly with fewer technical problems.

Rapid growth is predicted for computer-based tools in graphic design studios, advertising agencies, and magazines which normally use computer design stations. These computer design stations require proper training to be used cost effectively. Consequently, training is important for firms investing in them.

For the types of publications produced by graphic design studios, advertising agencies, and magazines, training is recommended by the author in the following five areas: word processing, artwork, graphics, page layout, and integration of programs. The manuals available for the individual programs were found to be adequate except in the area of integration. The information was spread out over several manuals and tended to assume more than entry level knowledge of computer vocabulary.

The goal of this project is to bring the integration information together into one resource. Each stage of integration will be explained for a user who is not computer literate. It is necessary to specify programs for the integration training module since different programs have different requirements for integration. Programs were selected based on popularity, extensive use, and technical competence in the graphic arts industry.

This project is comprised of two components. The first and major phase of the project is the experimentation, research, and writing of the integration training module. The final product will be an integration training module in the form of a reference manual. Research and experimentation will determine the specific contents and instructions for each chapter.

The second component is the evaluation and subsequent revisions. A panel of judges will be asked to use the integration training module. The judges will then evaluate the module by completing a questionnaire designed to evaluate accuracy, clarity, ease of use, and usefulness. After reading the evaluations, revisions will be made to the module.

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DEFINITION OF TERMS

Artwork programs	Specialized software programs that allow users to generate artwork on a computer. Referred to as draw/paint programs.
Desktop publishing (DTP)	The DTP process brings text, artwork, graphics, and page layout programs together, eliminating separate typesetting and image functions. Camera-ready copy is prepared at a computer work station.
Graphics programs	Software offering image editing and camera preparation for scanned images (graphics).
Integration	The process of importing one or more files from one software program into another software program.
Module	A training unit that is one complete segment of a larger training program.
Page layout programs	The primary function is designing of page(s) that utilize both text and graphics.
Publication/publishing	Small-to-medium sized printed pieces requiring text, artwork, and graphics. Types of works printed are annual reports, brochures, advertisements, newsletters, and magazines.

Scanned images Images scanned into the computer work station through the use of a flatbed scanner.

Word processing The primary function is formatting straight text matter.

The definitions above are the meanings that are meant to be portrayed in this project proposal. The terms may have other meanings and interpretations in other contexts.

INTRODUCTION

Purpose of the Study

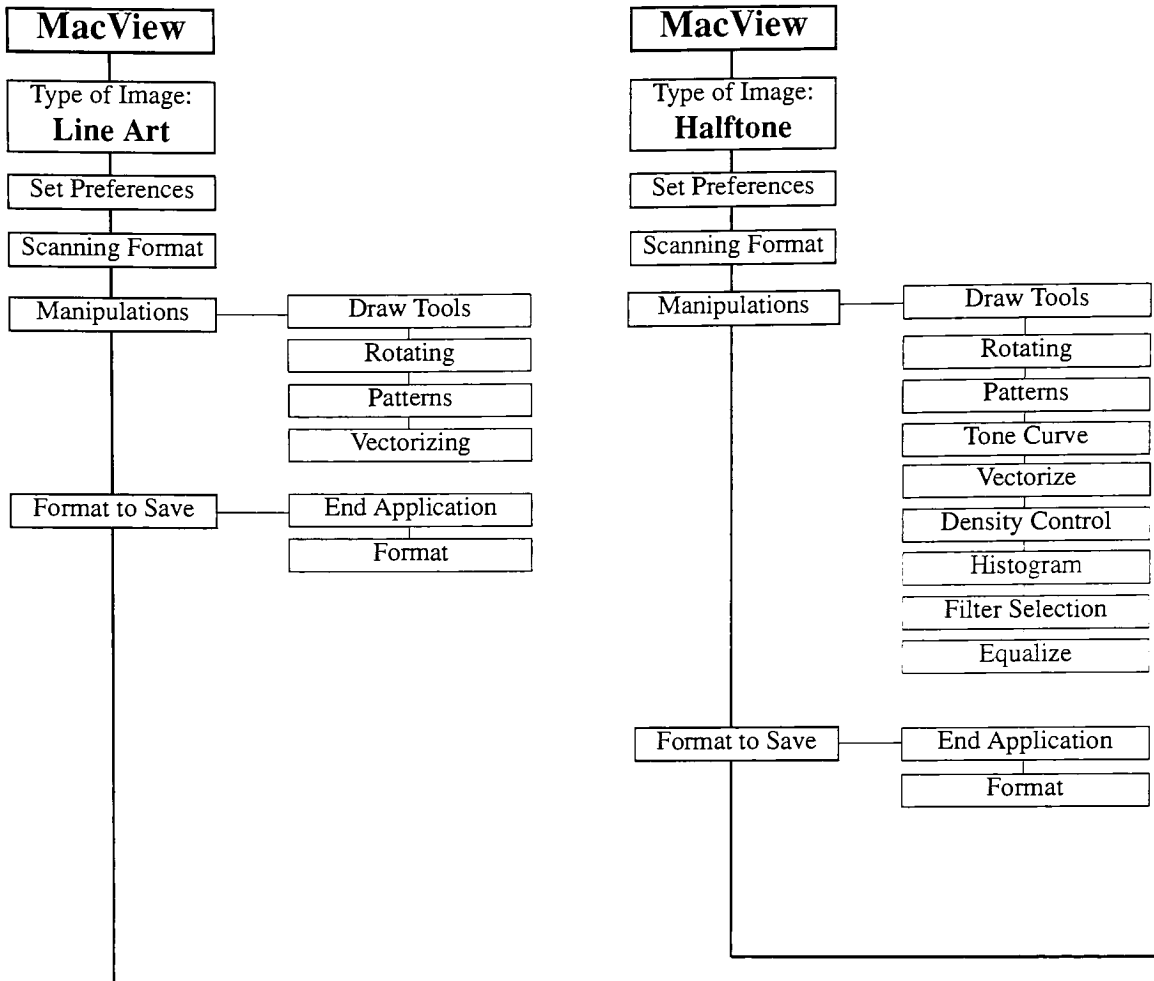
The purpose of this study is to develop an integration training module that is intended to guide users through the essential stages of importing text, computer-generated artwork, and scanned graphics into a page layout program. Currently, the information for successful integration must be referenced from several sources. By having the key elements of integration in one volume, users attempting to layout and/or design a publication using these programs will be able to proceed quickly with a minimum of frustration.

A quick reference guide, which will accompany the integration training module, will aid in visualizing the content of the integration training module (Figure 1). The Quick Reference Guide illustrates the layout for a piece to be published. The user wishes to import the actual text matter from a MacWrite file and artwork from Adobe Illustrator. Scanned images of a variety of types are to be imported from MC View Plus II. The stages and the considerations at each stage are illustrated in a flow chart format. The research and experimentation of this project will provide the specific instructions at each stage to make this importation process quicker and easier for the user to accomplish.

This integration training module is not intended to train a user thoroughly in each of the programs. The software reference manuals can be used to expand knowledge of each of the programs to specific desired levels of expertise. The integration training module's purpose is to outline and clarify the necessary steps to integrate the programs.

Background of the Study

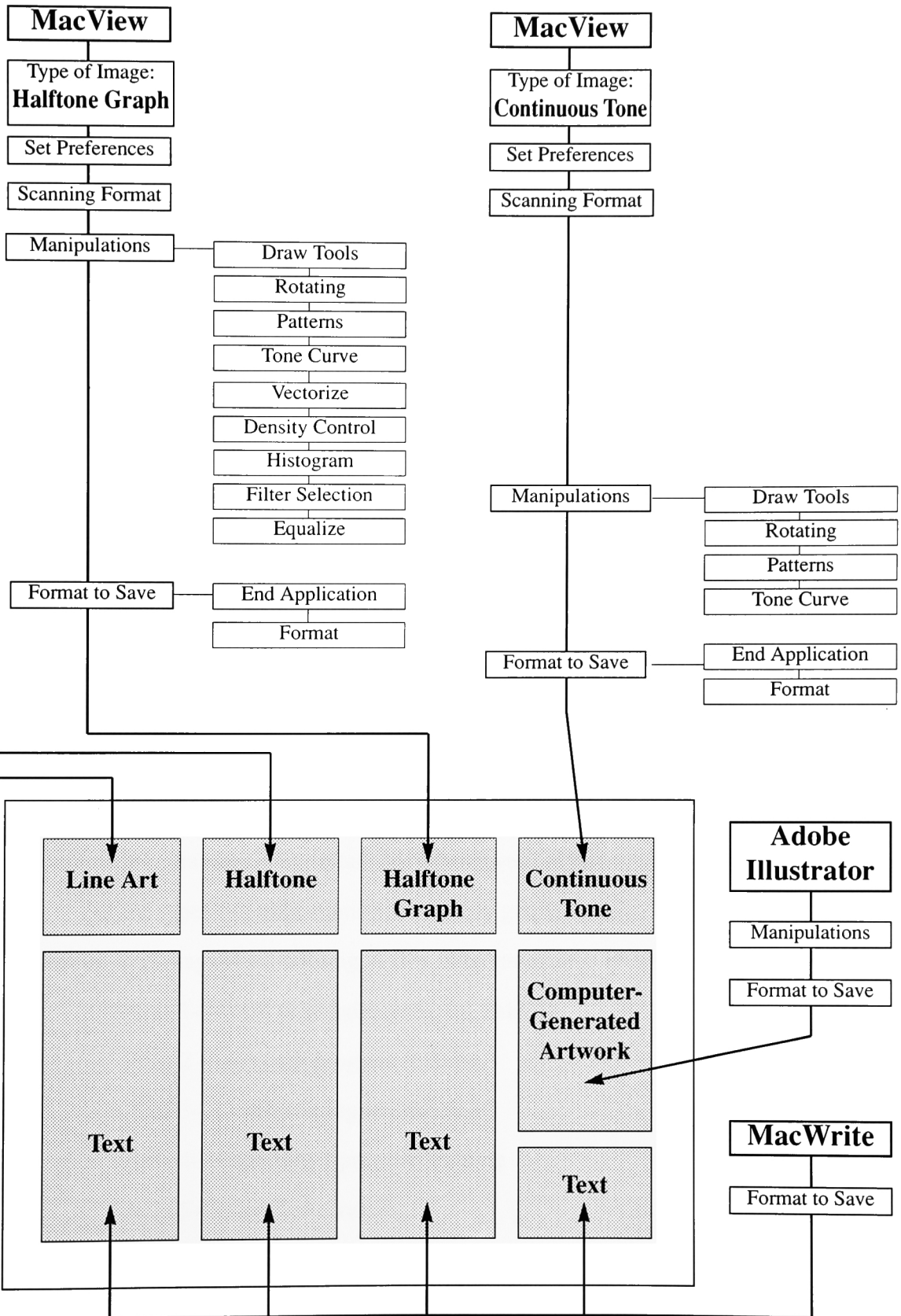
Rapid growth is predicted for computer-based tools for art, design, and production in graphic design studios and advertising agencies. Although moderate growth is currently predicted for magazine usage, once color capabilities improve and color costs decline



Quick Reference Guide

for
 Importation of Files
 from
MacWrite, Adobe Illustrator, and MacView
 into
QuarkXpress

Figure 1—Prototype of Quick Reference Guide to the Integration Training Module



the magazine market will rapidly increase. These three groups have been traditionally slow to make the initial investment, but as more of their competition incorporate electronic tools the remainder must do the same in order to remain competitive. The *DAVIS REVIEW* anticipates that within the next two years, enough studios and agencies will be using electronic equipment that the remainder will quickly do the same.¹

Desktop capabilities have reached a point of sophistication where page layout programs can be linked to high end prepress systems.² This reduces the amount of work that is sent to traditional service bureaus for typesetting, and to prepress houses for separation, cropping, media placement, stripping, and scaling. Keeping this work in-house can represent considerable cost savings and faster turn around time for design studios and advertising agencies.³ The economics of incorporating electronic design tools can be compelling for the reasons listed above.

These computer design stations require extensive training of personnel. If proper training is not included with the equipment, it is possible the equipment will stand idle while work is resumed in the traditional manner.⁴ It is not cost effective to have graphic designers utilizing typesetting service bureaus and doing mechanical paste-ups to make page layouts camera-ready when the investment in the electronic tools has been made. Consequently, training is important for firms investing in computer design stations.⁵

For the types of publications produced by graphic design studios, advertising agencies, and magazines, training in five different areas is recommended by the author.

Area 1—Word processing program training

Area 2 —Artwork program training

Area 3—Graphics program training

Area 4—Page layout program training

Area 5—Integration training

Areas 1 through 4 include training for the page layout program and the programs that regularly import files into page layout programs. These are artwork (draw/paint)

programs, graphics (scanning/image editing) programs, and word processing (straight text matter) programs. The fifth portion of the training program (integration training) is training the user to successfully bring text, artwork, graphics, and a page layout program together. This integration training module will be the module in this proposal.

The software manuals and/or tutorials that are available for the individual programs (Areas 1 through 4), are packaged by the software manufacturers as reference and training tools. When using these tools the author found them to be adequate for most situations. It was not confusing to go through one program on the Macintosh, using its accompanying reference manual.

However, this user found progress halted many times when attempting to integrate files, particularly files involving scanned images. During the course of several projects a variety of image types needed to be imported into a page layout program. Some of the problems encountered were: imported images became fragmented and reassembled haphazardly, line detail in graphs was broken up, artwork disappeared, and files to be imported could not be opened.

To troubleshoot these situations was frustrating. The information was spread out over several manuals, making it confusing and accessibility difficult. In addition, the program manuals tend to assume more than entry level knowledge of computer vocabulary when discussing importation. The solutions to the problems this author encountered were not always successful. Results were usually obtained by trial and error.

By having the key elements of integration in one volume, users attempting to layout and/or design a publication using these programs will be able to proceed quicker with less frustration. Each stage of integration will be explained for a user who is not particularly computer literate. Since files may originate at other sources, this will aid the graphic designer or art director in specifying the formats that are compatible with their computer network, avoiding delays and complications.

Scope of the Study

It is necessary to specify programs for the integration training module since different programs have different requirements for integration. The following programs are selected for their popularity, extensive use, and technical competence.

QuarkXpress—page layout program

Adobe Illustrator—artwork program

MC View Plus II—graphics program

MacWrite—word processing program

QuarkXpress currently holds the prominent position in page layout programs of the major programs considered, such as Ready, Set, Go! and PageMaker because of its precision and extensive user-defined typesetting capabilities. An expanded version is also capable of linking to high-end resolution (Scitex) through a proprietary format called Visionary.⁶

Adobe Illustrator—Although many draw and paint programs are available, Adobe Illustrator was chosen because of its popularity in design studios, longevity in the marketplace, and its relatively powerful functions and accuracy.⁷

MC View—This program is available for use in the Goudy laboratory. It enables the user to scan a variety of black and white images for editing using the AGFA Focus flatbed scanner. Images may be imported into Adobe Illustrator to be used as templates for artwork, or directly into QuarkXpress as completed images. This integration training module addresses the importation into QuarkXpress.

MacWrite— MacWrite has been selected for the word processing program because of its widespread use, ease of use, and popularity.⁸

Audience of the Study

This project is primarily targeted towards graphic designers who need to learn how to use these new tools in a minimum amount of time. Other persons who would be likely to benefit from this type of training module are new entries to desktop publishing, students,

and occasional users of the equipment, such as temporary and part time employees.

The module's use is initially restricted to facilities utilizing the programs and equipment selected for this project. In particular, users of the Macintosh network in the School of Printing Management and Sciences' Goudy Laboratory will find this module a helpful resource.

Although this module is specific in its program and selection, the format is such that information for other software programs may be substituted to accommodate various combinations of programs. Therefore it is possible to expand its use by creating revised editions, with more research and experimentation. The revised editions would be technically specific for other programming needs but much of the information would remain constant.

Reasons for Student Interest

Electronic publishing has brought design and production, once treated as separate entities, closer together. This technology is eliminating many manual steps of the publishing process and will continue as technology becomes more advanced.⁹ Currently these electronic tools offer prepress production capabilities for design, but do not yet have the technical capabilities in color to be feasible for full color print production. However, as the technology improves, the color limitations of desktop tools will decrease, eventually allowing acceptable design and full color production services.¹⁰

The research and writing of this training module will be of benefit by expanding the author's knowledge of the links, limitations, and possibilities in the current software and equipment. This will be a foundation on which to better understand the technology as it advances in the prepress area.

PROCEDURES

Methodology

This project is comprised of two components. The first and major phase of the project is the experimentation, research, and writing of the integration training module. The second portion is the evaluation and subsequent revisions.

1.) The Integration Training Module

- Assumptions for the module

- Selection of images and creation of files

- Research and experimentation

- Write module

2.) Evaluation of the Integration Training Module

- Selection of judges

- Evaluation by judges

- Analyzation of evaluations

- Revisions

The Integration Training Module

The final product will be an integration training module in the form of a reference manual. The Quick Reference Chart (Figure 1 on page 2) will accompany the training module. The basic outline of the book will follow the sample table of contents displayed in Figure 2 (pages 8–10). Each chapter will include a short explanation of the basic concepts of that chapter. The step-by-step sequence of the keystrokes will be included, as well as diagrams necessary to illustrate what is occurring on the monitor. Experimentation and research will determine the specific contents and instructions for each chapter.

ORGANIZATION OF INTEGRATION TRAINING MODULE

Table of Contents

List of Equipment and Software

List of Data Files and Images

List of Figures

Quick Reference Chart

Introduction to Publishing

Traditional Publishing —flow chart showing traditional production path

Desktop Publishing —flow chart showing production path utilizing electronic publishing capabilities

Introduction to Integration Training Module

Purpose of the Training Module—what it is trying to accomplish for the user

Assumptions—Questionnaire—knowledge user needs to proceed

QuarkXpress—The Page Layout Program

Importation of Text from MacWrite—The Word Processing Program

Location of Files—recognizing the icon, where to look for the files, what is included in the files such as; text only, text and formats, or tagged text

Format for Integration—saving format

Considerations—what needs to be addressed before importation or what can be or is handled better by QuarkXpress

Importation of Artwork from Adobe Illustrator—The Artwork Program

Location of Files —recognizing the icon, where to look for the files, what is included in the files such as; artwork, preview artwork, artwork and preview artwork, PostScript or bitmapped information

Figure 2—Sample Table of Contents for the Integration Training Module

Format for Integration—saving format

Considerations—what needs to be addressed before importation or what can be or is handled better by QuarkXpress, such as scaling, rotating, and other manipulations

Importation of Scanned Images from MC View Plus II—The Graphics Program

Location of Files—recognizing the icon, where to look for the files, what is included in the files such as; outline or bitmapped information, original scan or user revised scan

Format for Integration—saving formats

Line Art

Continuous Tone Image

Halftone Image

Halftone Diagram

Scanning Considerations—what needs to be addressed before importation or what can be or is handled better by QuarkXpress, such as scaling, rotating, and other manipulations

Preparing for Output

Location of Files—recognizing the icon, where to look for the files, what is included in the files such as; have the imported files become Quark files, where are the artwork and graphics residing, will they transport as previews or at full resolution

Floppy Disk

Hard Drive

Portable Hard Drive

Format to Export

Low End Resolution—Laser Printer

Linotronic

High End Resolution—Scitex Connection

Troubleshooting Guide—collection of some of the experimentation problems, mistakes a user could easily make, and solutions to these occurrences.

Glossary

Index

Assumptions

Since the purpose of this module is to provide instruction for importing text, artwork, and graphics files into a page layout program, users do not need extensive knowledge of the *imported* programs. Often files originate elsewhere, created by other sources. Minimally, the graphic designer only needs to import these files into the page layout program. Therefore, assumptions have been made of levels of Macintosh literacy and program competence in order to focus only on the integration aspect of the training program.

The author assumes the user has enough knowledge of Macintosh to recognize applications, windows, and menus. Basic knowledge of Macintosh programs should include opening, saving, and closing files.

A more extensive knowledge of QuarkXpress is required. Requirements include the basic Macintosh functions listed above, understanding of page setup, the QuarkXpress toolbox, text boxes and linking of text boxes, and picture boxes.

A list of user requirements is included in the module to determine if the user needs more background knowledge before proceeding with the integration manual (Figure 3, page 14). The user should refer to the manufacturer reference manuals that accompany the software if it is necessary to review or acquire more information.

Selection of Images and Creation of Files

All of the images will be black and white or have spot color. Process four color images will not be addressed in this module. The following types of images will be imported into QuarkXpress since each has different requirements.

Computer-generated artwork

- clip art from Adobe Illustrator

Scanned images (on AGFA Focus flatbed scanner)

- Line art

- Continuous tone image

—Halftone image

—Halftone diagram

The text and images that will be imported into the publication will be found in the following files. A MacWrite file will be created for the straight text matter to be imported. A clipart file will be created in Adobe Illustrator to be used as the computer-generated artwork. The remainder of the images will be scanned on the AGFA Focus flatbed scanner into MacView.

Evaluation of the Integration Training Module

Once the training module is completed, a panel of five judges will be asked to integrate files into QuarkXpress by following instructions of the integration training module. The judges will be selected from students in the School of Printing Management and Sciences and graduate students in the College of Fine and Applied Arts. These judges will have the basic knowledge required to use the module (ascertained by the user knowledge questionnaire), but will not be particularly Macintosh literate.

After using the integration training module to integrate files, the judges will evaluate the module by completing a questionnaire designed to evaluate the module for accuracy, clarity, ease of use, and usefulness (Figure 4, pages 15–17). The intent of the questions are listed below.

Question 1—Its function is to determine if the material is accurate.

Question 2—The intent of this question is to determine if the language is at the user's level. The module must be easy to read and the instructions clear.

Question 3—Its primary function is to see if the module is organized in a manner that makes it easy to use and access information.

Question 4—This question elicits information of the usefulness of this module as a training tool. It determines if it will be used or become another manual on the shelf.

Question 5—This question takes question 4 a step further and tries to determine if

the information is useful enough to customize it for specific customer needs.

Question 6—It addresses the concerns of training time. It is useful to know how quickly a user can successfully use the module.

Question 7 & 8—These questions are to determine the user's level of expertise.

Question 9—This is designed to elicit responses from the users on the ways the module may have been of use and suggestions on how it could be improved.

The images created for the experimentation portion of the project will be the images provided for the panel of judges. However, future users of this module will be providing their own images to use for their own publication. In the complete training program, as users proceed through each of the programs, files will have been created for integration. The list of text and images at the beginning of the manual will be a guideline of the tools necessary to go through an entire training program.

The final portion of the project will include an analyzation of the results of the questionnaires. Adjustments to the training module that will enhance its usefulness, further clarity, and ease of use will be implemented.

User Qualifications for the Integration Training Module

To determine if you need more training before using the Integration Training Module, read the following list of Macintosh and QuarkXpress procedures. Users must be able to recognize the terms and carry out the procedures listed. If any areas are unclear more training is necessary in order to successfully use the Integration Training Module.

Macintosh Knowledge Required:

- Equipment: What is the monitor, keyboard, hard drive, disk drive, and mouse
- Windows: Title bar, scroll bar, close box, zoom box, and size box
- Procedures: Use of mouse: click, double click, highlighting
 - Opening: Open disks, applications, and files
 - Saving: save to disk, save to hard drive
 - Closing: close file
 - Quitting: quit application, close disk, eject disk

QuarkXpress Knowledge Required:

- Procedures: Page Setup: set page size, set all margins, select single or facing pages, set columns and gutters
 - Toolbox: Crosshair tool, editing tool, text box tool, picture box tool, text box linking tool
 - Text boxes: make and delete text boxes, move and scale text boxes, select and deselect text boxes
 - Picture boxes: make and delete picture boxes, move and scale picture boxes, select and deselect picture boxes

The Integration Training Module Evaluation Form

Name: _____

Date: _____

Please check one of five choices for each question: SA—Strongly Agree, A—Agree, N—Neutral/Unsure, D—Disagree, or SD—Strongly Disagree

- | | SA | A | N | D | SD |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <p>1. The instructions were not accurate. Results achieved were different from those in the module. Which instructions were not accurate and explain what happened. Please do not include slight variations in dialogue boxes which may occur between different versions of the same program.</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- | | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <p>2. The instructions were clear and easy to follow. List any instructions that were ambiguous and explain how they were unclear.</p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|

Figure 4—The Integration Training Module Evaluation Form

- | | SA | A | N | D | SD |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 3. The organization of the module and the sequence of the material was logical, making it easy to use. Comments, if any, to improve the organization of the module. _____

_____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. If your company were using these programs, this module would not be a valuable reference and training source. It would not be used frequently. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. If your company were using other programs, would you like to see a version of this training module custom made for those programs? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Approximately how many hours did it take you to complete the training module? _____ | | | | | |
| 7. Before using this training module my computer experiences involved the following types of programs:
(select as many as applicable)
none
word processing
draw/paint
page layout
other—describe _____

_____ | | | | | |
| 8. Approximately what percentage of the procedures outlined in this module could you accomplish before using this module?
none
0-25%
25-50%
50-75%
75-100% | | | | | |

Figure 4—(con't.)

Equipment, Laboratories, and Materials

Equipment and Laboratories

Access to the Goudy laboratory, with its Macintosh network will be necessary for this project. The following equipment from the Goudy laboratory will be needed:

Macintosh IIx

AGFA Focus flatbed scanner

Laser output devices—AGFA P3400 PS

Varityper VT600W

Portable hard drive

Software

QuarkXpress—page layout program

Adobe Illustrator—artwork program

MC View—graphics program

MacWrite—word processing program

Images and Text

Computer-generated artwork

—clip art from Adobe Illustrator

Scanned images (on AGFA Focus flatbed scanner)

—Line art

—Continuous tone image

—Halftone image

—Halftone diagram

RESULTS OF THE PROJECT

Desirable Attributes Relative to the Purpose

The stated purpose of this thesis project is to develop a training module to integrate text, computer-generated artwork, and scanned graphics into a page layout program. The following characteristics are desirable for this training module:

1. Location of information—The information necessary to *successfully import* files must be contained in one source, The Integration Training Module.
2. Accuracy—Users must achieve the same results as the author when following the instructions in the module.
3. Clarity —The information must be written at the level of the targeted user. The audience is a relatively unsophisticated Macintosh user and is unskilled in using systems for preparing mechanicals.
4. Organization—The format must allow quick and easy accessing of information.
5. Effectiveness—The module must be considered a useful resource by the users.
6. Training time—The users must be able to proceed quickly through the module.
7. Format of the module—The format must be adaptable so that the module may be customized for other programs without difficulty.

User Responses to The Integration Training Module

Analyzation of the Integration Training Module Evaluation Forms (Figure 4, pages 15–17) show the Integration Module to generally be a success. The responses to the questionnaire are compiled in chart form in Figure 5 (page 20). Better than average or excellent responses were found for 22 out of 25 rated responses from questions 1–5.

Results of the Integration Training Module Evaluations

Synopsis of Questions	User Responses				
	User #1	User #2	User #3	User #4	User #5
Question 1: Accuracy of instructions	D	SD	D	D	SD
Question 2: Clarity of language	A	SA	A	—	SA
Question 3: Organization of module	A	SA	SA	—	SA
Question 4: Effectiveness of this module	D	SD	D	N	SD
Question 5: Desirability of customized modules	A	SA	A	SA	SA
Question 6: Training time in hours	1.5	1.75	1.5	1.5	1.5
Question 7: User expertise— familiarity with similar programs	draw/paint, page layout	all, plus scanning	all, plus scanning	all, plus scanning	all
Question 8: User expertise— percent of functions able to accomplish before using module	25–50%	75–100%	50–75%	50–75%	0–25%
User Comments	well organized, suitable for low level users only	well organized, clearly written	desired in depth technical information	desired more detailed scanning information	organized, liked graphics, liked trouble- shooting section

Figure 5—Results of the Integration Training Module Evaluation Forms

Accuracy and Clarity

Questions 1 and 2, dealing with accuracy and clarity, yielded high responses by four of the five users. User #4 disqualified himself for question 2, concerning clarity of the instructions, because he was familiar with Quark and did not need the “How To Import” instructions.

Two of the users were extremely pleased with the instructions. User #2’s comment was, “Directions were very clear and precise. It brought complex actions and terminology down to basic, easy-to-follow instructions.” User #5 especially liked the extensive use of graphics accompanying the instructions.

The other two users found no major problems with the instructions, but had several suggestions to improve clarity. User #1 suggested including directions to draw a picture box before activating a picture box, although it was not suggested to draw a text box before importing text. User #3 thought it would be wise to remind users at the beginning of each chapter that QuarkXpress is the page layout program. Two of the charts also needed clarification.

Organization

The organization of the module was a particularly successful attribute. Each chapter discusses a different type of file or image to be imported. Each chapter is designed to stand on its own so users do not need to access information from other chapters. Although this format causes some material to be repetitive, users do not need to read the module from beginning to end in order to import a specific type of image. User #1 stated, “The repetitiveness also allows each section to be a manual on its own. Therefore, one section does not have to be completed before another.”

Each chapter is divided into distinct sections. A summary of the save formats, “How To Save,” is first, followed by the “How To Import.” The more technical information, explaining the processes and formats, is contained in “Hints: What Has Happened.” A troubleshooting section, “Hints: What To Look For,” is at the end of each chapter.

The organization of the chapters makes the module work on two levels. Beginners appreciated that they could get in and out of the module very quickly by using the “How To” sections. This is suited for the user who has no interest or time to spend on the technology. However, users wanting a more technical understanding had that information available to them. User #2 states, “The basics came first and more technical information followed for the user to read if needed. Therefore all necessary information was located at the start of each chapter. This organization made it extremely simple for me to find the information I needed and not get bogged down in technical details. I read those after completing the exercise.”

Question 3 was not rated by User #4. However User #4 suggested that the chapter on importing halftone charts, graphs, and diagrams follow line art, since the procedure recommends using line art methods. Since the original image is a specific type of halftone, the chapter remains in its initial location, following the chapter for importing halftones.

Effectiveness

Questions 4 and 5 elicited responses on the usefulness of the module. Out of ten possible responses, one was neutral, four were better than average, and five were excellent. User #4 was neutral about the usefulness of this particular module (question 4) because he was fairly proficient in using the programs and equipment before reading this module. However he felt a customized version for specific work situations (question 5) was an excellent idea.

Training time

The training time for all of the users was virtually identical, regardless of the users' backgrounds and previous experience. This supports the responses that the instructions are accurate and clear. Since the beginners were able to complete the identical set of exercises in the same time frame as the more experienced users, it indicates that time was not lost by incorrectly interpreting instructions.

The 1.5 hours needed to complete the exercises is considered a reasonable amount of training time by the author. This was the amount of time needed by the five users to get in and out of the “How To” sections for scanning and importing files. Although reading the technical information adds to the training time and the knowledge of the user, it is optional reading and not necessary for the user who needs only to import quickly. The time factor also supports the favorable responses to the organization of the module.

Format of the module

The organization of the module was designed to simplify customizing for specific programs and scanners. By dividing the chapters into sections as explained under *Organization* (page 19) much information can be retained with virtually no changes. Required changes would be found primarily in specific sections.

The “How To Import” and “How To Save” information is separate from the technical information. Many of the changes necessary when changing programs would be restricted to the “How To” sections.

Most of the technical information in the “Hints: What Has Happened” sections are conceptual and deal with standard save formats and their attributes. This information will not change from program to program.

Many of the troubleshooting problems found in “Hints: What To Look For” would remain constant because of the characteristics of the save format selected, especially if the page layout program remained the same. However if the page layout program is changed, then some of the information would remain constant, but other examples would need to be altered to suit the specific selected programs.

The basic skeleton is a good one judging from the user responses. It is not anticipated that problems would occur trying to convert this skeleton to other applications.

User Levels of Expertise

Five students were selected to complete a series of exercises using the instructions in the module and then to answer the questionnaire. Two of the five users (Users #1 and #5) had no previous experience working with QuarkXpress or the Agfa scanner, but had worked with other programs at a beginner level. The other three users had some working knowledge of QuarkXpress and the Agfa scanner.

Users #2 and #5, the most experienced and the least experience users, gave the module the highest ratings. Both made very positive comments about the organization of the module. The organization was the key factor that made the module work well for them. The basics of scanning and importing are relatively simple. The aim of the module was to clarify the bewildering array of choices and offer basic technical information without exceeding the users levels. In this regard the module was a success for User #3, who appreciated having the basic technology explained. However both Users #3 and #4 would have liked more depth to the technical information.

Suggestions for Improving The Integration Training Module

The language and liberal use of graphics are intended to guide non-sophisticated users through the integration process. Although technical information is included for the user who wishes to expand his knowledge beyond the basics of “How To”, it may not be enough for a more accomplished user or a user who wants a quantity of technical information. The technical information provided in the module is written for the understanding of non-technical users. The module is simplistic for users who have progressed beyond the beginner stage. To appeal to a wider audience the technical information could be expanded further.

The more advanced users suggested that information on optimizing scanning be included. This module explains the basics of the scanning process and the basic choices users must make when in the scanning program. The inclusion of hints on how to get the optimum scan would be a valuable addition and enhance the usefulness of the module.

Problems Encountered

The original plan of the author was to recommend a save option for each type of image and to illustrate how to import these images into Quark. However, it became evident that the selection of a save format was not the only crucial choice when preparing a file for importation. The save format selections offered to the user are dependent upon the scan output option selected prior to scanning. To select the proper scan output a number of variables must be taken into consideration first. The user should consider the resolution of the output device, whether or not viewing the image on the monitor is necessary, whether or not the ability to modify the image after it is saved is necessary, and whether or not the ability to modify it after it is imported is necessary. Therefore, the scanning process and its options played a much larger part in the development of this module than originally anticipated.

The author made a concerted effort to discuss only the crucial choices that affected the save formats and importation in order to keep the module true to its original purpose and not to overwhelm the target audience. The scanning program offers many options and tools not discussed in detail in this module. How to get the optimum scan becomes the next question of the more accomplished user and is really beyond the scope of this module.

CONCLUSIONS

Conclusions

The Integration Training Module is suitable training tool for its target audience at two levels. Beginners found the module easy to read and understand, and appreciated the organization that separated the technical information from the instructions on scanning, saving, and importing. Some users will not want to progress beyond the basics of accomplishing the “How To” instructions. Others will eventually desire the more advanced and technical information that is available. By segregating the instructions and technical information the module appeals to both types of users.

The module has possibilities for being customized for specific work situations. It could be revised to display instructions for other major page layout programs and/or other scanners with their accompanying software. Many users only want to get in and out of a system quickly. Customizing this module would allow those users to accomplish their work quickly with no guesswork. This module could be used as a prototype for producing a series of training modules to accompany page layout software or scanner software.

Value of the Project

The Integration Training Module is a good training and self-teaching tool. The instructions to import into QuarkXpress are easy to learn. The real value of the module is the pulling together of the technical information that explains what has happened in the scanning program, what has happened during the import to the page layout program, and how these elements work together. Information about the scanning program, page layout program, the attributes of the scan outputs, and the attributes of the save formats which had been dispersed among various training manuals and periodicals is now located in one volume. This module is particularly suitable for self-training in the School of Printing, since it is

software and equipment specific to that facility.

Many changes in the software will occur in the future, however, much of the module is conceptual information explaining the scanning process and the nature of the save formats. This type of information should not change in the immediate future. Therefore, although specific instructional information will change with each software revision, the basic technical information will be of value beyond those changes.

Recommendations for Future Projects

The logical next step for study would be experimentation in how to optimize scanning. The author found that the *basics* of scanning needed to be included in this module. However, experimentation and information on how to get the *optimum* scan was really another subject in itself. In addition, two of the more advanced users of this module requested more information on this subject. A study experimenting with type of image, type of scan, and type of output device would be a good compliment to this module.

FOOTNOTES

- ¹ L. Mills Davis, "Toward The Electronic Studio, Part 2, Signs of Intelligent Life In The Marketplace," *DAVIS REVIEW*, Volume 2, Number 2, December, 1989, pp.2–20.
- ² Robert Virkus, "Page-Layout Play-offs," *MacUser*, January, 1990, p. 127.
- ³ L. Mills Davis, "Toward The Electronic Studio, Part 2, Signs of Intelligent Life In The Marketplace," *DAVIS REVIEW*, Volume 2, Number 2, December, 1989, p. 13.
- ⁴ Marie Freckleton, Assistant Professor, discussion at the School of Printing Management and Sciences, Rochester Institute of Technology, Rochester, New York, May, 1990.
- ⁵ *Ibid.*
- ⁶ Robert Virkus, "Page-Layout Play-offs," *MacUser*, January, 1990, p. 127.
- ⁷ Marie Freckleton, Assistant Professor, discussion at the School of Printing Management and Sciences, Rochester Institute of Technology, Rochester, New York, May, 1990.
- ⁸ *Ibid.*
- ⁹ Virgil J. Busto, "The Design Connection," *High Volume Printing*, February, 1990, pp. 34–36.
- ¹⁰ L. Mills Davis, "Toward The Electronic Studio, Part 2, Signs of Intelligent Life In The Marketplace," *DAVIS REVIEW*, Volume 2, Number 2, December, 1989, p. 32.

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The Integration Training Module

**A Guide for Importing Text and Graphics
into a Page Layout Program**

Importing MacWrite 5.0, Adobe Illustrator 88,
and MC View Plus II files into QuarkXpress 2.12

by Linda A. Jackson

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MacWrite is a trademark of Claris™ Corporation.
Adobe Illustrator is a trademark of Adobe Systems Inc.
PostScript® is a trademark of Adobe Systems Inc.
MC View Plus II is a trademark of Agfa-Gevaert N.V.
P3400PS is a trademark of Agfa-Gevaert N.V.
Linotronic is a trademark of Allied Corporation.

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List of Materials

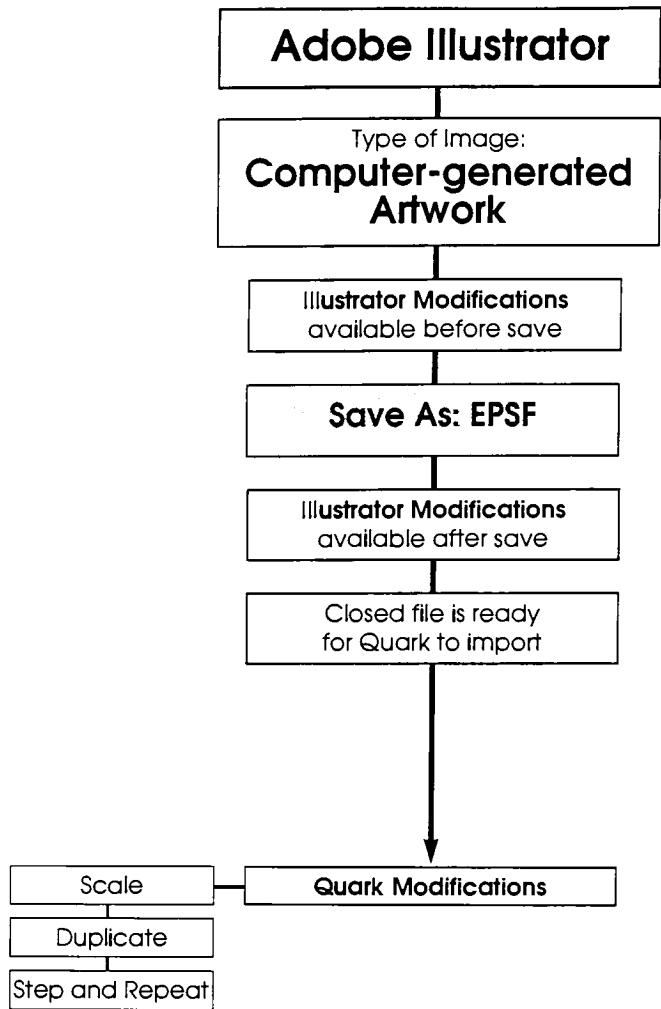
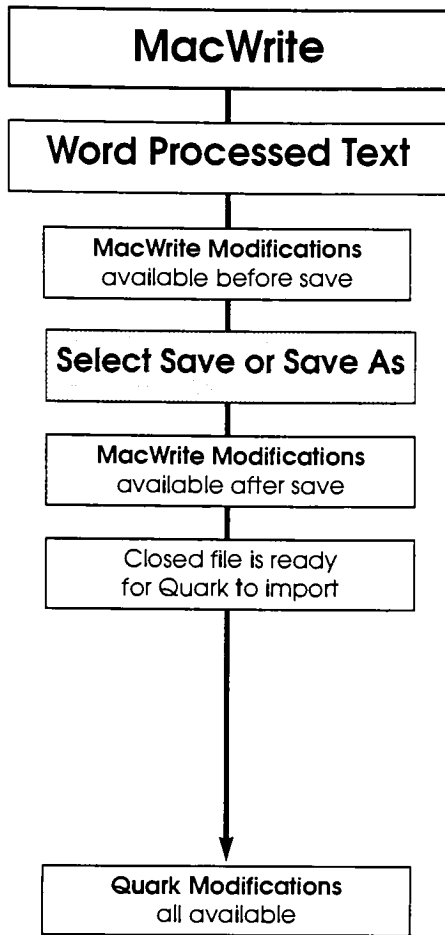
- Equipment**
- Macintosh IIx computer
 - AGFA FOCUS flatbed scanner
 - Laser output devices—AGFA P3400 PS
Varityper VT600W
 - Portable hard drive
- Software**
- QuarkXpress 2.12—the page layout program
 - Adobe Illustrator 88—the artwork program
 - MC View Plus II—the graphics program
 - MacWrite 5.0—the word processing program
- Images and Data Files**
- Computer-generated artwork
 - Adobe Illustrator clip art
 - Scanned images (on AGFA Focus flatbed scanner)
 - MC View Plus line art
 - MC View Plus continuous tone image
 - MC View Plus halftone image
 - MC View Plus halftone diagram/graph
 - Text
 - MacWrite text

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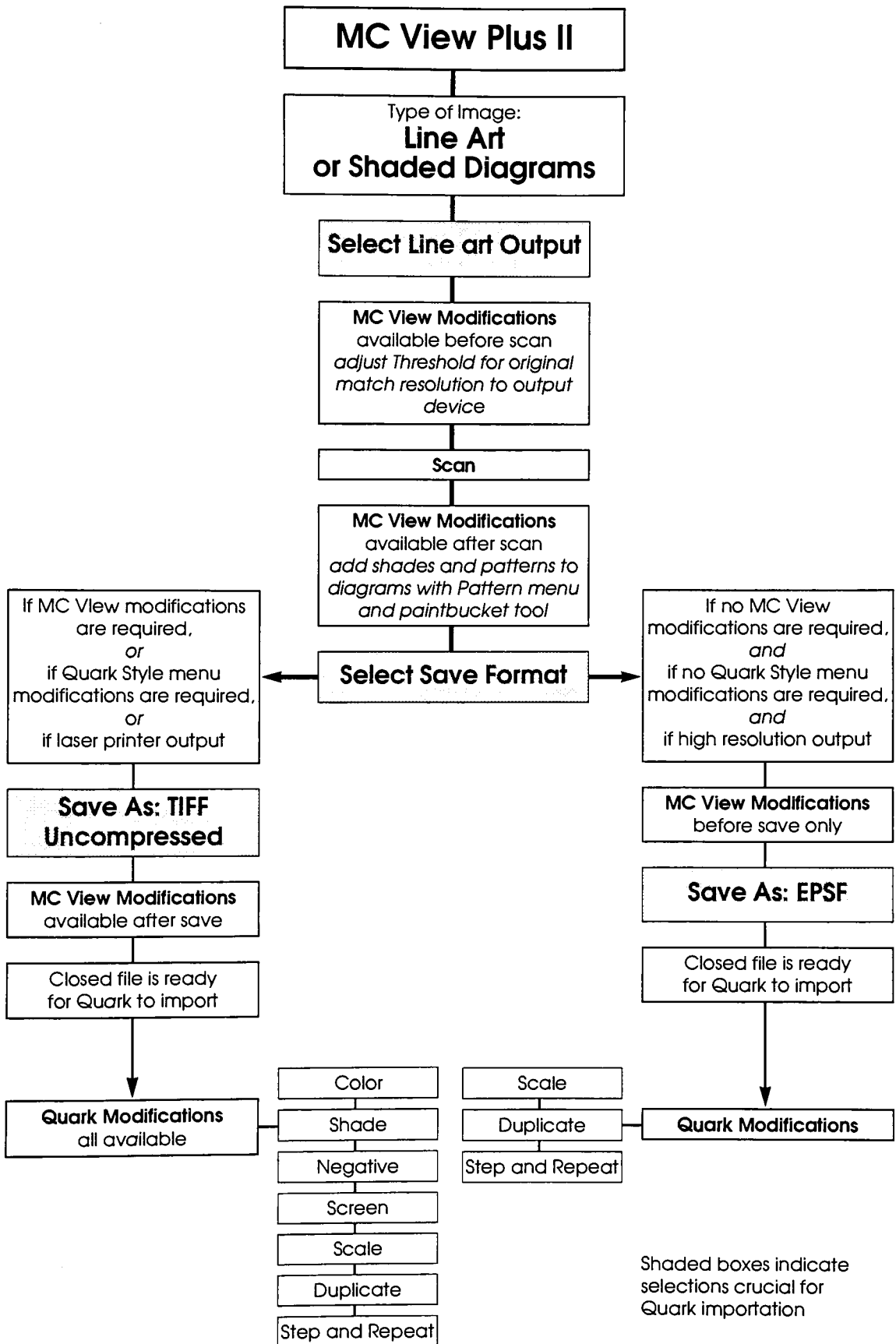
- Figure 1** Quick Reference Guide to the Integration Training Module (pp. vii–xi)
- Figure 2** The Traditional Publishing Production Sequence (p. 2)
- Figure 3** The Electronic Publishing Production Sequence (p. 3)
- Figure 4** A Comparison of Typographic Capabilities between MacWrite 5.0 and QuarkXpress 2.12 (p. 17)

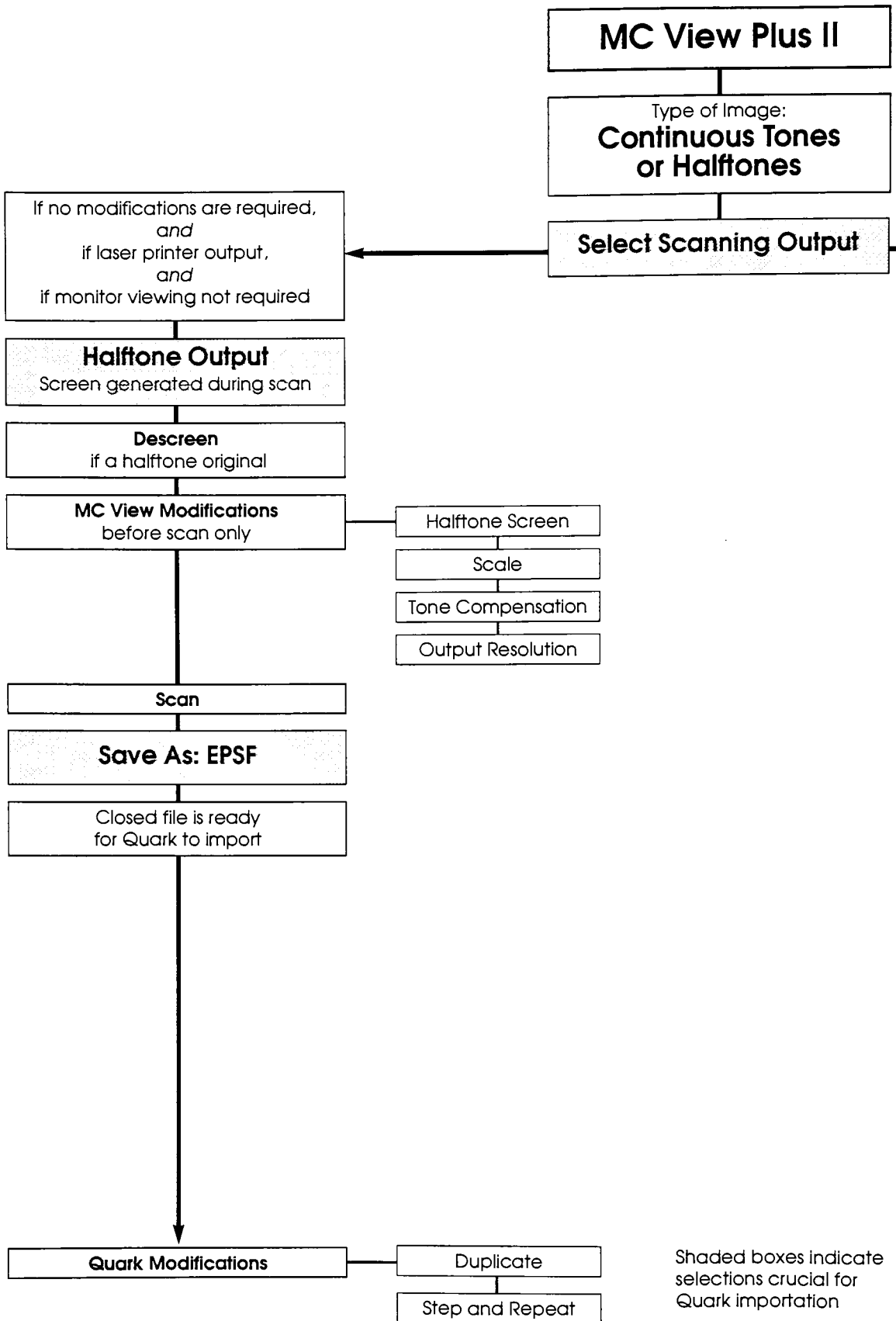
Quick Reference Guide

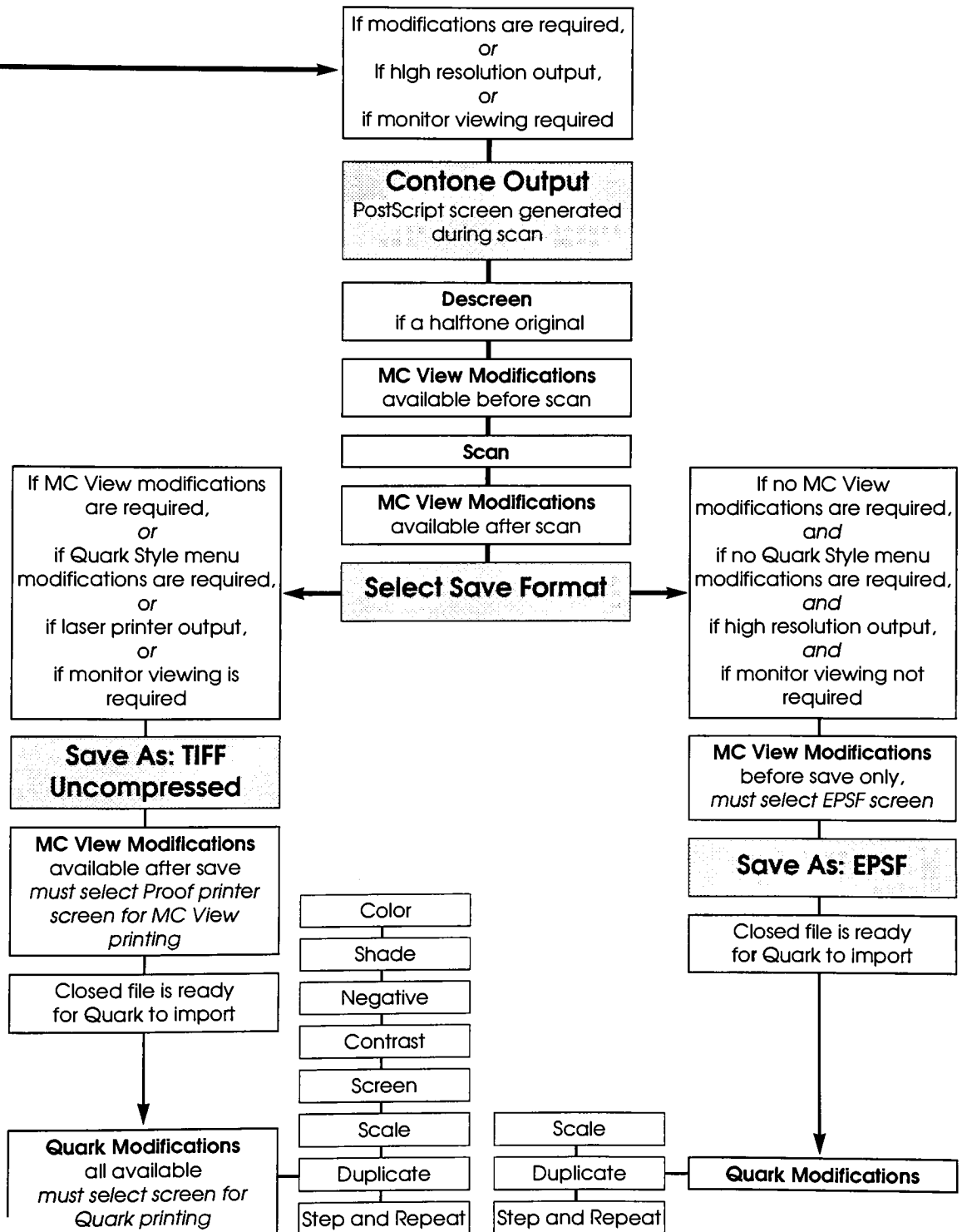
Figure 1—The Quick Reference Guide to the Integration
Training Module →



Shaded boxes indicate selections crucial for Quark importation







Introduction to Publishing

Publishing Production Processes

Traditional Production Process In the traditional production process many of the prepress functions are manual and involve numerous steps in several departments. Figure 2 (page 2) shows the path of a typical traditional production sequence.

Line copy requires professional typesetting, usually set at service bureaus. Editing and revisions will be returned to the typesetter until the copy is satisfactory. Thumbnails of the layout and copyfitting of the text is done manually by designers. The typeset copy and line art is pasted-up to designer specifications by mechanical artists.

Once the mechanicals are ready, line negatives are shot by the camera department. The camera department prepares halftone and separation negatives of continuous tone and color images separately from line negatives. The line negatives and halftone/separation negatives are then assembled by the stripping department. Proofing of the assembled page can be done only after stripping.

Electronic Production Process Electronic publishing is versatile and efficient. Many prepress functions can be accomplished at a single work station. Shaded boxes in Figure 3 (page 3) display stages of production that can be handled by an electronic system.

The electronic system not only allows designers to experiment with layouts and type quickly, but editing, typesetting, copyfitting, and computer-generated artwork can be done in-house on the same system. By generating halftones and separations electronically, the camera work can be done in one step. Image assembly has been done electronically, so stripping is not necessary. Changes can be made at any time before the negatives are shot and assembled pages can be proofed at any time.

The Traditional Publishing Production Sequence

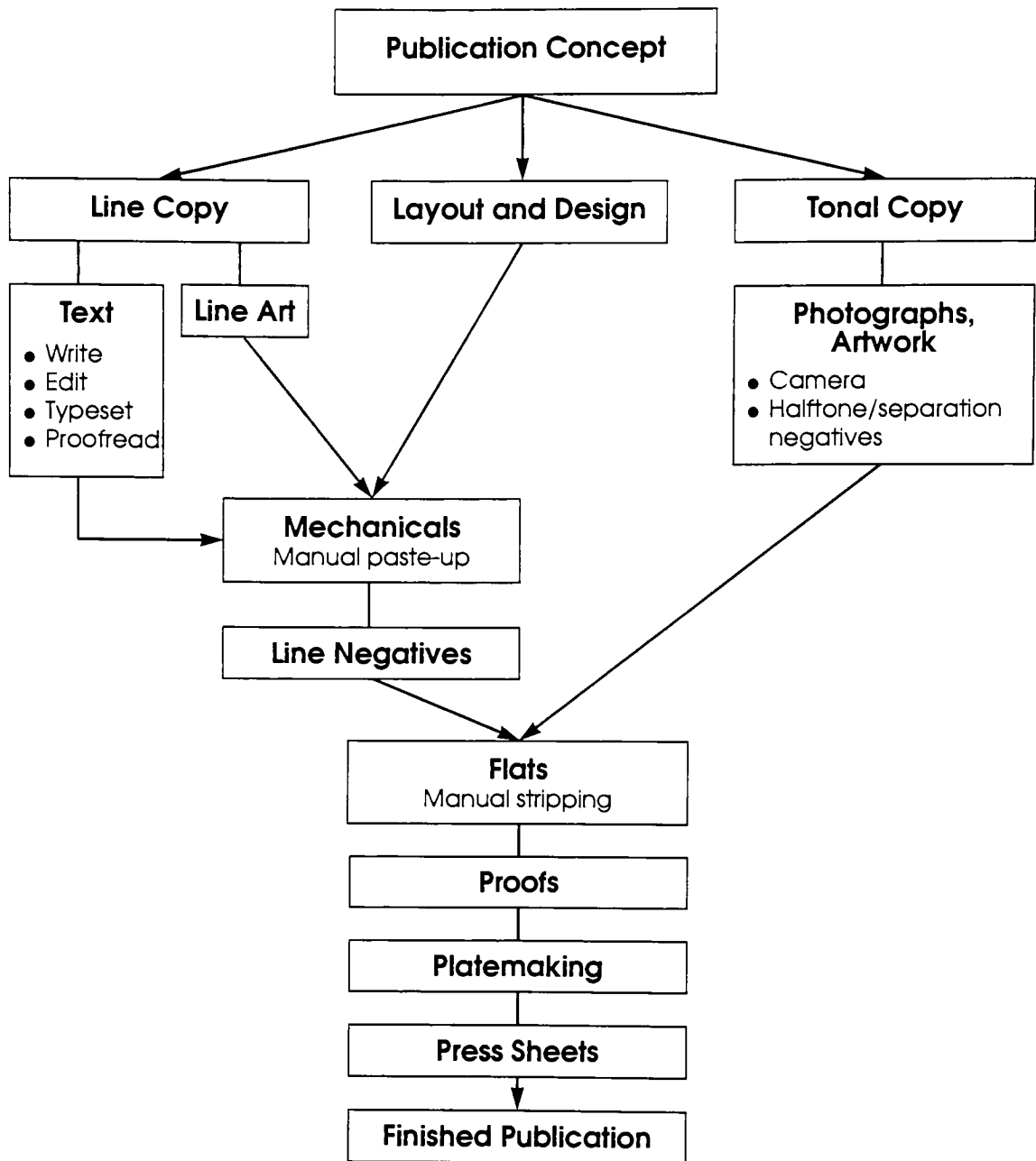


Figure 2 The Traditional Publishing Production Sequence 1, 2

The Electronic Publishing Production Sequence

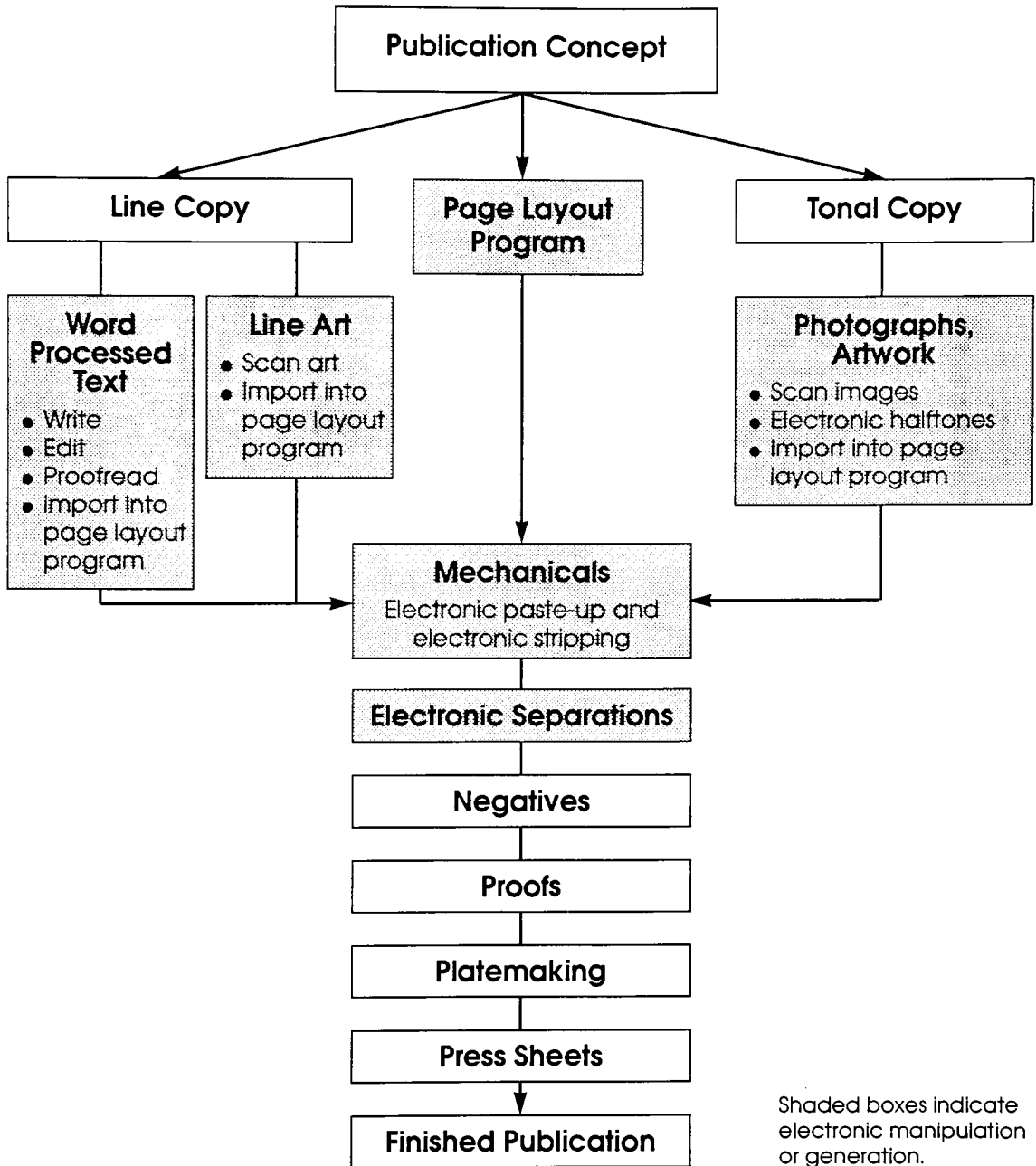


Figure 3 The Electronic Publishing Production Sequence 3, 4

The Integration Training Module

Purpose of the Training Module

The purpose of this training module is to guide users through the essential stages of importing text, computer-generated artwork, and scanned graphics into a page layout program. Previously the information for successful integration had to be referenced from several sources. By having the key elements of integration in one volume, users attempting to layout and/or design a publication using the specified programs will be able to proceed quickly with a minimum of technical problems.

This integration training module is not intended to train a user thoroughly in each of the programs. The software reference manuals can be used to expand knowledge of each of the programs to specific desired levels of expertise. This module's purpose is to outline and clarify the necessary steps to integrate the programs.

Format of the Training Module

The Integration Training Module has three major sections. The two introductory chapters provide background material and preparation information. The following six chapters deal specifically with integration and are labelled by the software program used and the type of file to be integrated. Each of the six integration chapters are intended to be complete in themselves, so that users do not need to build knowledge from preceding chapters. Users may go directly to the chapter which deals with their specific type of image and follow the sequence of saving and importing without referring to other chapters. The final chapter provides important information on output of the integrated documents. A glossary and index are found at the end of the module.

Chapter Organization

The chapters addressing integration are broken down into five or six sections. The sections are:

Save Format for Integration

How to Save in MC View Plus (if a scanned image)

How to import

Hints: What Has Happened

Hints: What To Look For

Considerations: Before and After Importation

Save Format for Integration

This section simply states what save format the file should be in *before* it is imported. This allows the user to specify to outside sources the preferred save format. If the application is available the user may open the file to check the saved format. Some incorrect save formats may be changed to correct save formats, but if the original formats save less information than the correct formats, then essential information has been lost.

How to Save in MC View Plus

Saving an image in MC View is not one simple save function. Save format choices are dependent upon other choices and considerations the user must make. This section covers the major selections a user will face when scanning and saving to have an image ready for importation into Quark. Although it is not intended to review the entire scanning process and options, it highlights the crucial choices.

How to Import

This section is a keystroke by keystroke sequence of how to import the file into the page layout program. Graphics have been liberally used to illustrate the process.

Hints: What Has Happened

These hints are for the user who wants to know more than just the keystrokes. Short, easy to understand explanations of what has happened are included to provide a basis for understanding the process. This information is valuable when the need for troubleshooting arises.

Hints: What To Look For

A troubleshooting section is included with each chapter. Examples of common importation problems are included along with brief explanations of what is wrong and the solutions to the problem.

Considerations:
Before and After
Importation

Although each of the programs used in this module are specialized, some of the tools and functions are the same or handle similiarly. When importing files from programs that have overlapping functions, the user must make decisions in which program to address these functions. This section examines which functions overlap and which program is the better choice for handling each of the overlapping functions.

Assumptions

Vocabulary

In order to simplify the vocabulary of this module several frequently used terms have been shortened. The term module refers to this integration training module, while reference manual or manual indicates manufacturer reference manuals that accompany original software. For ease of use, Adobe Illustrator is Illustrator, MC View Plus is MC View, and QuarkXpress is simply Quark.

Definitions of terms used in this module are found alphabetically in the glossary at the end of the module.

Scope

It is necessary to specify programs for the integration training module since different programs have different requirements for integration. The following programs are selected for their popularity, extensive use, and technical competence.

- QuarkXpress 2.12—page layout program
- Adobe Illustrator 88—artwork program
- MC View Plus II—scanned graphics program
- MacWrite 5.0—word processing program

All of the images are black and white, but could have spot color. Process four color images are not addressed in this module.

User Knowledge

Since the purpose of the module is to provide instruction for importing text, artwork, and graphics files into a page layout program, users do not need extensive knowledge of the imported programs. Many times files originate elsewhere, created by other sources. Minimally, the user only needs to import these files into the page layout

program. Therefore, assumptions have been made of levels of Macintosh literacy and program competence in order to focus only on the integration aspect of files. A simple listing of the necessary knowledge is provided under User Qualifications.

User Qualifications for the Integration Training Module

To determine if more training is necessary before using the Integration Training Module, read the following list of Macintosh and QuarkXpress terms and procedures. Although only a basic knowledge of Macintosh is necessary, a more extensive knowledge of QuarkXpress is required. Users must be able to recognize the terms and carry out the procedures listed. If any areas are unclear the user should refer to their Macintosh manual or QuarkXpress reference manual to review or acquire more information.

Macintosh Knowledge Required

Equipment: What is the monitor, keyboard, hard drive, disk drive, and mouse

Windows: Title bar, scroll bar, close box, zoom box, and size box

Procedures: Use of mouse: click, double click, highlighting

Opening: open disk, applications, and files

Saving: save to disk, save to hard drive

Closing: close file

Quitting: quit application, close disk, and eject disk

QuarkXpress Knowledge Required

Procedures: Page setup: set page size, set all margins, select single or facing pages, set columns and gutters

Toolbox: crosshair tool, editing tool, text box tool, picture box tool, text box linking tool, and text box unlinking tool

Text boxes: make and delete, move and scale,
select and deselect

Picture boxes: make and delete, move and
scale, select and deselect

Importing Text from MacWrite:

Word Processed Text

Save Format for Integration

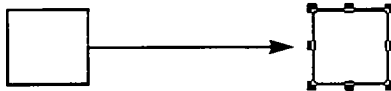
Save is the only choice that MacWrite offers. **Save As** is the same format.

How To Import Text into QuarkXpress

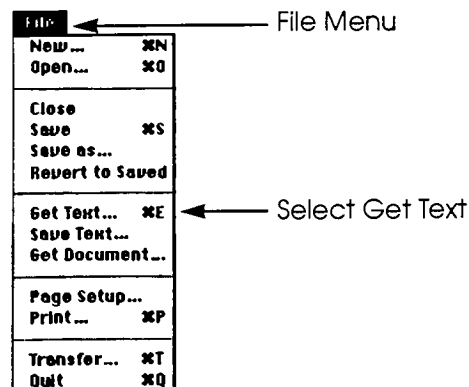
- Select the editing tool from the tool palette and click. The selected tool will become a negative image.⁵



- Activate text box with a single click of the mouse.⁶



- Select Get Text under the File Menu. Get Text can only be selected if a text box and the editing tool are activated.⁷

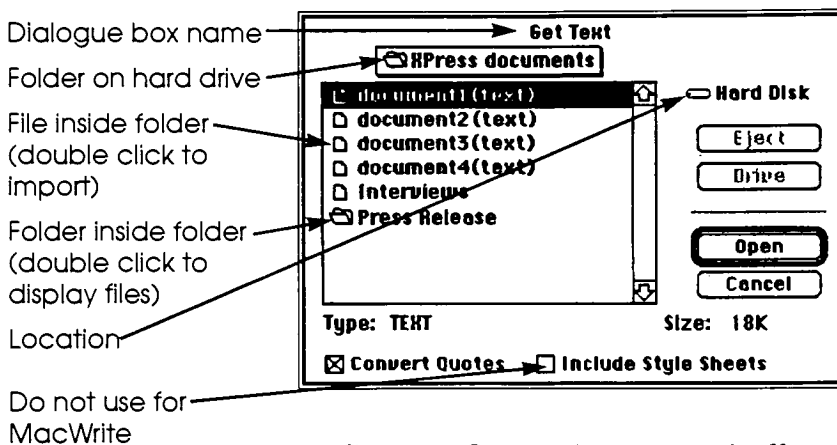


- The Get Text dialog box will appear. If you are in a file, it lists the files and folders that can be imported into Quark from the location

(hard disk or floppy disk) where you opened this file. If you are in a folder at either location, it lists the files in that folder.⁸

A double click on a folder name will open that folder to show you its folders or file names. Folders can be inside folders so double click until the desired file is found.

To change location, a single click on the “drive” button will transfer you between the disk and the hard drive.



- Convert Quotes is automatically selected. It converts ' and " to ' and ". If the file has many measurements in inches and feet, then the Convert Quotes may be deselected by a single click.⁹

- Select the desired file for text importation. A double click on a file name will import the text from that file into the activated text box.

A single click on a file name, then a single click on the “open” button will also import the text.

- The text box from the Quark document should now be displayed with the imported text in place.

Hints: What Has Happened

When Quark “gets text” from the selected MacWrite file it imports all the text and text formats from that file.

However graphics are not imported with this function. If the MacWrite file has graphics within it (such as MacPaint or MacDraw graphics), they must be addressed separately using the Get Picture function, the Clipboard, or the Scrapbook.¹⁰

Text Overflow Since text is poured into text boxes, it flows to fit the size and shape of those text boxes. If the MacWrite file is imported into a text box that is part of a chain of linked text boxes, the text will automatically flow from one text box to another in sequence of the linkage. By using the Auto Page Insertion option under Preferences in the Edit menu, Quark has the capability to automatically add pages to accommodate text overflow.¹¹ The Quark manual explains when this option may be used.

If the activated text box is not part of a text box chain, or if the chain is not large enough to hold all of the text and the Auto Page Insertion option is not in operation, then Quark displays the ☒ symbol to indicate that text continues but is not visible.

Style Formats Quark has a MacWrite filter that allows the file to be read directly. Therefore style formats incorporated in the original document should be found in the Quark document. However since the filters are not fully capable of identical reading, proofreading is recommended.¹² For example, the filter does not read superscript from a MacWrite file. Below are listed styles that should be considered when planning a document.

Page style:

Margins	Text Alignment
Headers	Page break
Footers	New line
Indents	New paragraph
Tabs	

Typographic style:

Font	Hyphenation (manual)
Type style	Word spacing
Leading	Character spacing
Point size	

Hints: What To Look For

Get Text Display Missing

- If Get Picture displays under the File menu instead of Get Text then:
A picture box is selected. Deselect the picture box and activate a text box.¹³
- If Get Text is shaded instead of solid then:
The wrong tool is selected. Activate the edit tool.¹⁴

MacWrite Files Missing

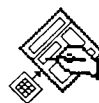
- If the *desired* MacWrite file does not display in the Get Text dialog box then:
Use the Find File function found under the Apple menu to locate the file. If the file is not found it must be installed on the hard disk or the diskette.

To manually search for the MacWrite file, close the Quark file and application. Search by looking for the MacWrite icon with the appropriate file name in the window.

- If *no* MacWrite files display in the Get Text box then:
The Quark MacWrite filter is missing. Close the Quark file and quit the application. Install the Quark MacWrite filter in the Quark folder.



MacWrite icon



MacWrite filter

Text Format Problems

- If text flow between text boxes is incorrect then:
Select the Linking tool to see which boxes are linked and in what sequence. Correct by using the Linking and Unlinking tools.
- If text breaks within the text box then:
Go to the View menu and select Show Invisibles.
Look for New Lines, New Paragraphs, and Tabs.¹⁵

← New Lines
(manual returns)



New Paragraphs

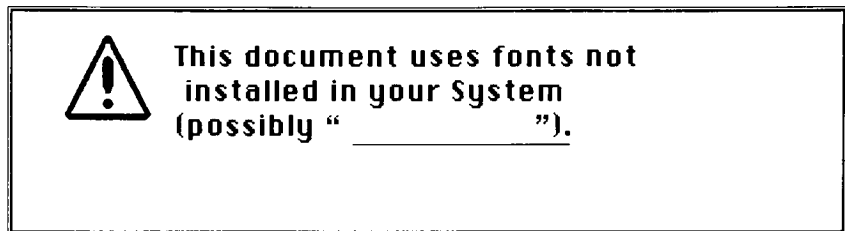
→ Tabs

The tabs and returns are set for the line length in the original document. The text box in the Quark

document has determined a new line length, resulting in unsuitable breaks. Delete manual returns and tabs that are undesirable. If you are using a specified style sheet for the QuarkXpress document, apply the style sheet to the imported text before deleting returns and tabs.

Font Problems

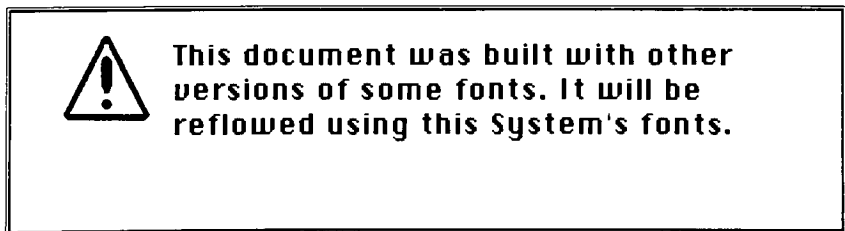
- If the system you are using does not have the fonts that were used in the original MacWrite file then the following dialogue box will appear:



The file will be imported but the specified font(s) will be substituted on the screen and the output from that system will be bitmapped. To prevent bitmapped output:
Install the specified font(s) into the system.

Substitute the original font selection with a font that currently resides in the system.

- If the system you are using has another version of a font used in the original MacWrite file, then the following dialog box will appear:



When the file is imported the new font version will be substituted for the original version, reflowing all of the text according to the new font version. The reflowing can make major differences in the copyfitting. However output from that system will be in PostScript of the new font version, not a bitmap. If this is not acceptable then:
Install the original font into the system.

Considerations: Before and After Importation

- Editing Text** Text can be edited in both MacWrite and Quark, but it is preferable to edit in MacWrite before importing. This is especially true if versatility is a factor because edited MacWrite files, carrying both text and formats, may be imported into a variety of programs.¹⁶ However edits applied in Quark remain in Quark and do not go back to the original MacWrite file. Although Quark text may be exported with the edits by using the Save Text option, only the text is saved and exported, not the page format.¹⁷
- Font Selection and Type Style** Font selection is dependent upon the system that will be doing the output, not the programs. Therefore, it does not matter which program is used to make the font selection. Fonts should be selected based upon which printer fonts currently reside on the hard disk, or plan to install the printer fonts on the hard disk before printing.
- Typographic Functions** One of Quark's major advantages is its extensive typographic functions which are user controlled. Quark gives the user many typographic options not available in MacWrite and with more precision. When setting up a MacWrite file only basic typographic choices can be and need be addressed. More extensive typographic choices should be made in Quark to take full advantage of the program's possibilities. A listing in Figure 4 (page 17) gives the user a quick comparison of capabilities between the two programs.
- Saving in Quark** When the Quark document is saved, text that has been imported becomes part of the Quark document. The output of the Quark document is not dependent upon the MacWrite file residing on the diskette or hard disk.

A Comparison of Typographic Capabilities between MacWrite 5.0 and QuarkXpress 2.12

Typographic Functions	MacWrite	QuarkXpress
Point sizes	6 standard sizes (9, 10, 12, 14, 18, 24 pts)	2–500 pts
Size increments	1–6 pts	.25 pt
Reversed type	no	yes
Hyphenation controls	no	yes
Adjustable leading	no	yes, absolute or auto
Leading increments	line spacing—single, 1 1/2, and double	.001 pt
Kerning	no	yes—automatic, manual, increments of .005 em, kerning table access
Tracking	no	yes—increments of .005 em
Adjustable letter spacing	no	yes
Adjustable word spacing	no	yes
Baseline shift	no	yes
Font rendering	no	yes
Font styles	yes, but limited	yes, more choices

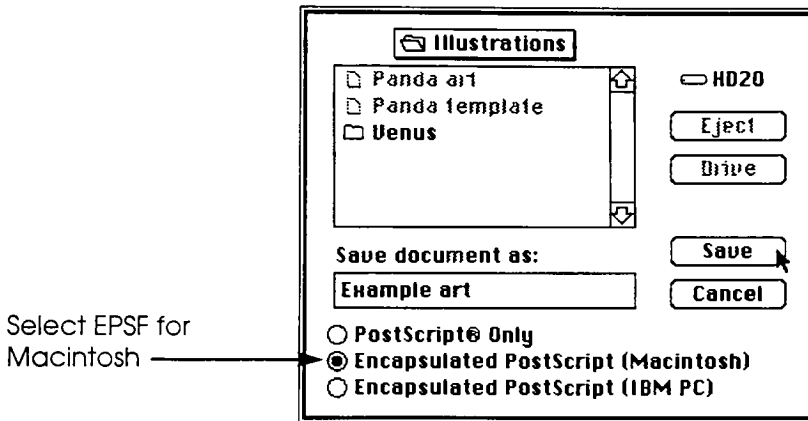
Figure 4—A Comparison of Typographic Capabilities between MacWrite 5.0 and Quark Xpress 2.12 ¹⁸

Importing Artwork from Adobe Illustrator:

Computer-generated Artwork

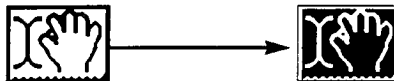
Save Format for Integration

Adobe Illustrator files must be saved in the **Encapsulated PostScript (EPSF)**, **Macintosh** format. QuarkXpress cannot read the other formats, including PostScript Only, from Illustrator.¹⁹

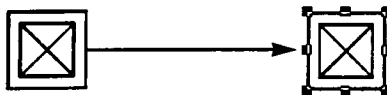


How To Import Computer-generated Artwork into Quark

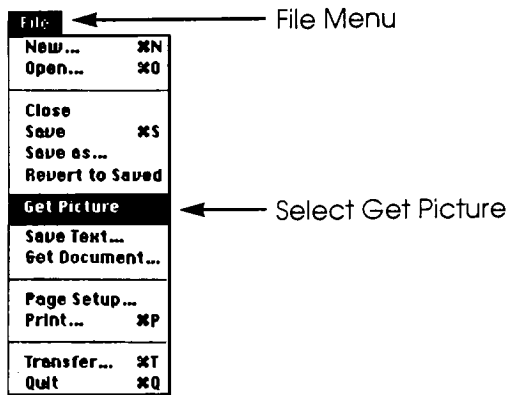
- Select the editing tool from the tool palette and click. The selected tool will become a negative image.²⁰



- Create a new picture box or activate a current picture box with a single click of the mouse.²¹



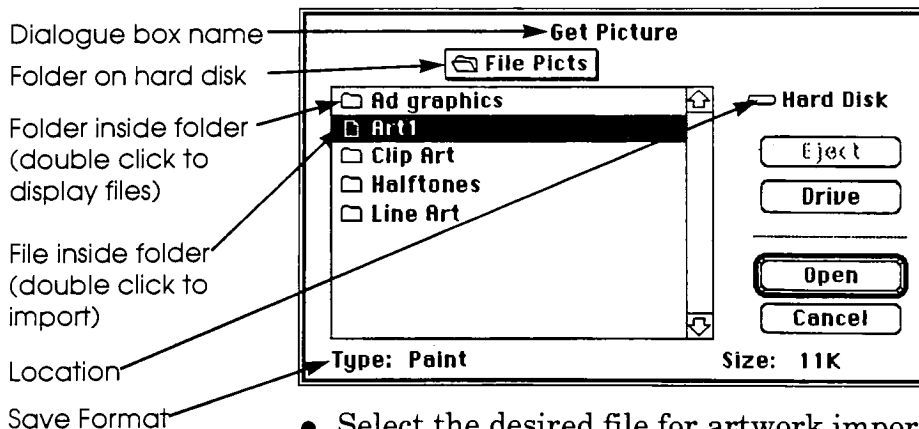
- Select Get Picture under the File Menu. Get Picture can only be selected if a picture box and the editing tool are activated.²²



- The Get Picture dialog box will appear. If you are in a file, it lists the files and folders that can be imported into Quark from the location (hard disk or floppy disk) where you opened this file. If you are in a folder at either location, it lists the files in that folder.²³

A double click on a folder name will open that folder to show you its folders or file names. Folders can be inside folders so double click until the desired file is found.

To change location, one click on the “drive” button transfers you between the diskette and hard disk.



- Select the desired file for artwork importation. Its save format is displayed in the dialogue box.

A double click on a file name will import the art from that file into the activated picture box.

A single click on a file name, then a single click on the “open” button will also import the file.

- The picture box from the Quark document should now be displayed with the imported art in the picture box. The imported picture replaces any picture that was previously placed in the box.

Hints: What Has Happened

The EPSF Import The appearance to the viewer is that the entire “picture” or artwork from Illustrator has been imported at the size it was created in Illustrator. In actuality, EPSF creates two formats, both formats are contained in one file, and displayed by one icon when viewed on the desktop.

The first format is a PICT format, which is the “preview” picture seen in the picture box on the screen. This PICT format file is used by Quark for placement, scaling, and cropping. It is also the information which low resolution non-PostScript printers (such as ImageWriters) use to print. The PICT format has smaller memory requirements and is saved with the Quark file after it is imported.²⁴

This PICT portion of the EPSF file should not be confused with PICT files. PICT files are created in draw programs or scanning programs to be imported into Illustrator and used as templates for artwork. They have separate icons whereas the PICT portion of the EPSF file is contained within that file and is not seen on the desktop.²⁵

The second format of the file is the PostScript format. This is the more accurate output printed by PostScript printers. The PostScript information is not saved with the Quark document, but is accessed from the original Illustrator file when the Quark document is printed.²⁶

Hints: What To Look For

- Get Picture Display Missing**
- If Get Text displays under the File menu instead of Get Picture then:
A text box is selected. Deselect the text box and activate a picture box.²⁷
 - If Get Picture is shaded instead of solid then:
The wrong tool is selected. Activate the edit tool.²⁸

Illustrator Files Missing from Get Picture Display

- If the desired Illustrator file does not display in the Get Picture dialogue box then:

The file may reside in a different folder or it may not be resident on the hard disk or floppy disk. Use the Find File function found under the Apple menu to locate it. If the file is not found then it must be installed on the hard disk or diskette.

The file may be saved in the wrong format. The Get Picture dialogue box will only display files that are in an accepted format for importation. Find File will locate the file, but not display the save format. Close the file and quit the application. Go to the location (using Find File) and look for the PS/Mac Illustrator icon with the appropriate file name in the window on the desktop. The Illustrator icon displays an "A" or "88" depending on the version. The ⚡ indicates the EPSF format.²⁹



Adobe Illustrator Icons
Encapsulated PostScript, Macintosh

If the format is incorrect, a double click on the icon will open the file so that the save format can be changed (the application must be resident).

Blank Picture Box on Screen

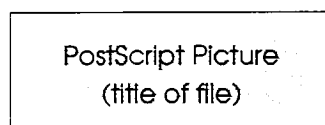
- If the X inside the picture box disappears but the picture box is blank then:

The picture has been imported but its visible portions are not centered in the picture box. Use ⌘-shift-M to automatically center the picture within the picture box.³⁰

The edit tool may also be selected. The hand portion of the tool will be activated and the picture can be moved by "sliding" it with the hand.³¹

Artwork Missing on Screen

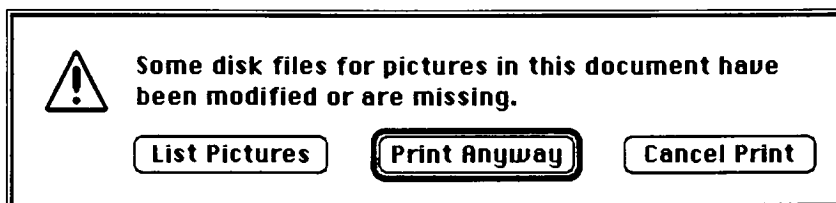
- If after importing the EPSF file the following message appears in a gray shaded picture box then:



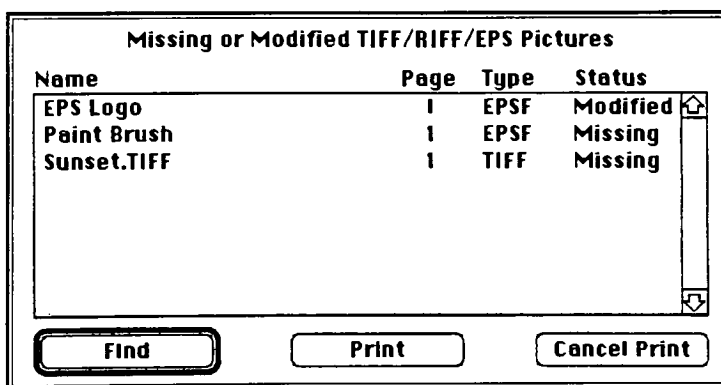
The PICT format is too large for screen viewing and has not been imported. The PostScript will be accessed for output if a PostScript printer is used, but the PICT portion of the EPSF file is not available for screen viewing or bitmap output from low resolution printers.³²

**Imported
Artwork Files
Modified or
Missing**
(Output is
Bitmapped)

- If the following dialogue box appears when attempting to print then:



Go to List Pictures to determine if the problem is missing or modified pictures. Another dialogue box will appear listing the file name of the artwork, page location, format of the file, and the missing or modified status.³³



Modified Picture

- If the file has been modified then:
When outputting in PostScript, the modified Illustrator file will be accessed for the printout. The message serves as a warning because the PICT preview has not changed unless the picture has been reimported.³⁴

If it is necessary to view the modifications on screen, then reimport the Illustrator file using Get Picture.

- Missing Picture
- If the picture is missing then:
Select the missing file from the Missing or Modified dialogue box, then select Find. Quark will locate the file and reestablish the path so it may be accessed for output.³⁵

The artwork can also be imported again under Get Picture.³⁶

The dialogue box is a warning that the output will be low resolution (provided the PICT preview has appeared in the picture box). Quark is not able to find the PostScript format of the artwork. Since Quark saves only the file name of the PostScript portion of the EPSF, it must be able to locate and access the original EPSF file in order to print in PostScript. When it cannot find the original EPSF Illustrator artwork it outputs in the PICT format that was saved as part of the Quark document.³⁷

Files become Missing files because specific conditions must be observed to enable Quark to locate and access EPSF files:

If the Quark document is moved to another system, the EPSF file must be moved to that system also.³⁸

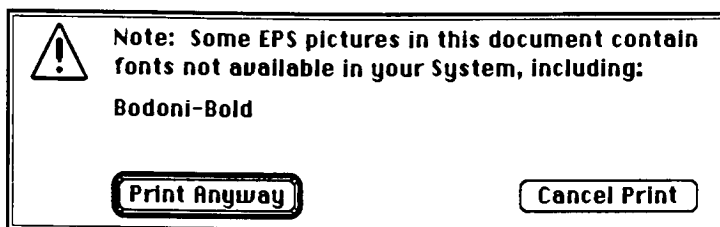
The name of the EPSF file must remain the same as the name used when importing the artwork. Quark will search for the original Get Picture name and will not recognize a new name.³⁹

The sequence of the folders that Quark needs to access to locate the EPSF file is the called the "path." The path names and their sequence must remain the same as in the original Get Picture.⁴⁰

Quark will search in the Quark document folder if the original path has changed. If an EPSF file needs to be moved, relocate the file in the Quark document folder so Quark can find it.⁴¹

Font Substitution within the Artwork

- If the following dialogue box appears when attempting to print then:



An imported Illustrator file contains screen fonts that are not available on this system. Quark assumes that the printer font is also not available and displays the warning. The System file may be checked for the possible missing printer font or select Print Anyway. If the printer font is not available Quark will substitute Courier for the missing font.⁴²

If the printer font is not resident the screen fonts and printer fonts must be installed into the system.

Considerations: Before and After Importation

Editing Editing of the artwork must be done in Adobe Illustrator. Quark cannot change individual elements of the artwork or add elements to the artwork. The only changes Quark is capable of are changes that affect the picture in its entirety such as scaling and duplicating. These are found in the Item menu under Modify. None of Quark's Style menu options can be used to modify Illustrator's EPSF artwork.⁴³

Scaling Scaling is dependent upon the PostScript format which is accessed back to the original EPSF Illustrator file. Since PostScript describes the artwork mathematically, the quality of the output will be the same whether from scaling in Illustrator or Quark.⁴⁴

The benefit of scaling in Quark is that you do not need to quit Quark, then open Illustrator to scale. The results of the scaling are on the screen for immediate viewing. Quark's limitation is that scaling encompasses the entire artwork. However, it can scale a picture horizontally and

vertically independently so that proportional or distorted scaling can be done.

The advantage of scaling in Illustrator is that individual elements of the artwork can be changed in size. However, if scaling takes place in Illustrator after importing, modifications to the original will not appear on the screen in Quark, but will appear in the output.⁴⁵ The artwork must be reimported to view the changes on the screen.

Duplicating Duplicating in Quark works best if the artwork is in its finished state. The entire picture box and its artwork is duplicated when in Quark. Multiple duplication is possible with the Step and Repeat function. This function controls quantity and placement of the duplication in equal increments horizontally and/or vertically.

In Illustrator more duplicating options exist but should be handled before importing to eliminate jumping back and forth between applications. The options are duplicating individual elements rather than the whole and duplicating while moving or transforming (rotating, scaling, shearing, reflecting) the elements.⁴⁶

Duplicating is dependent upon the PostScript format which is accessed back to the original EPSF Illustrator file. Since the artwork is described mathematically by PostScript, the quality of the duplications will be the same from both programs.⁴⁷

Saving in Quark When the document is saved after the artwork is imported, the PICT portion of the EPSF Illustrator file is saved with the Quark document. The PostScript portion of the EPSF file remains in its original location, not with the Quark document. However, saved with the document is the EPSF file name and the path names needed to access that EPSF file for printing.

The name of the Quark document may be changed at any time, however the EPSF file name and the path must remain the same as when the file was imported so that Quark can locate it for printing.

Importing Scanned Images from MC View Plus: Line Art

Save Format for Integration

Considerations Importing scanned graphics is not a simple choice of a correct format versus an incorrect format. Often more than one save format is available for scanned line art. The format selected depends upon several factors. They are:

Modifications:

Are MC View modification options necessary?

Are Quark modification options necessary?

Screen viewing:

Is a good screen representation necessary?

Output Resolution:

Low resolution—Laser printer (under 1000 dpi)

High resolution—Typesetter quality
(over 1000 dpi)

The proper save sequence in MC View Plus for line art involves choices from three separate options. The three options and the selected choices are:

Scan selection option: **Line art Output**

End application option: **QuarkXpress**

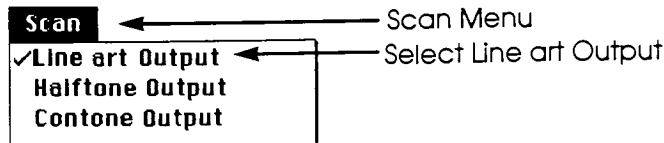
Save format option:

TIFF Uncompressed—if Quark's Style menu options (shade, color, and screening) are required *or* if output is laser printer resolution.

EPSF—if Quark's Style menu options are not required, *and* output is high resolution.

How to Save in MC View Plus

Scan Selection Line art Output is selected before the initial scan in MC View Plus under the Scan menu.⁴⁸ A √ will be placed next to the selected output. It is important that the file be scanned as line art since Quark treats TIFF line art differently than other TIFF files.⁴⁹

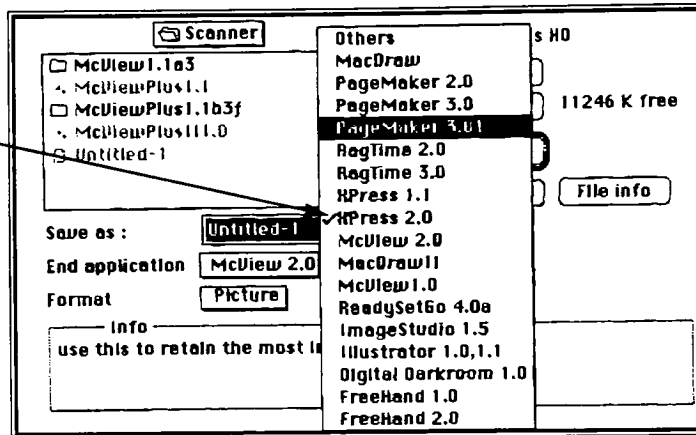


Note: Pixel editing is often necessary for line work.

End Application

After the scan select Save as under the File menu. This displays End application options from which the target program, XPress (Quark), is selected from the submenu.⁵⁰

Select XPress (Others and MC View will work also. They display the same format options for Line art Output)

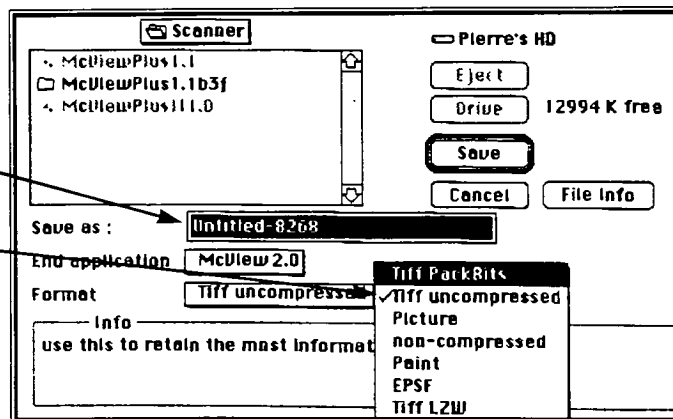


Save Formats

By selecting Quark as the end application, only the formats that Quark will accept will be displayed in the Format submenu.⁵¹ If Others is selected the submenu will display all of MC View Plus's saving formats.

Give the file a descriptive name to help identify it

Select Tiff Uncompressed or EPSF



TIFF Uncompressed

Select TIFF Uncompressed if the output device is a low resolution laser printer or Quark's Style menu options are required (shade, color, and screening).

EPSF Format Select EPSF if the output is a high resolution device and Quark's Style manual options are not necessary. There is no noticeable difference between Tiff Uncompressed and EPSF when printing from a laser printer. Since EPSF is memory intensive, select this format only if the output is high resolution. Once a file is saved in the EPSF format no modifications may be made to it.⁵² Therefore changes in MC View are restricted to *before* the save and Quark modification options (except for scaling) are eliminated.

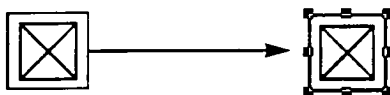
Note: If the format is selected before the end application, and it is not appropriate to the end application, then the format will jump to another selection. By selecting the end application *before* selecting the format the problem of the format jumping around will be eliminated. Unnoticed format changes may adversely affect the Quark import.

How To Import Line Art into QuarkXpress

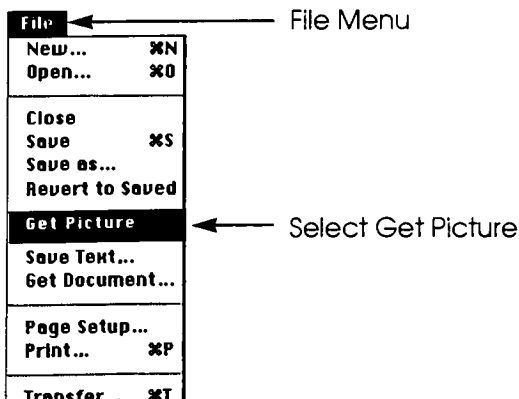
- Select the editing tool from the tool palette and click. The selected tool will become a negative image.⁵³



- Create a new picture box or activate a current picture box with a single click of the mouse.⁵⁴



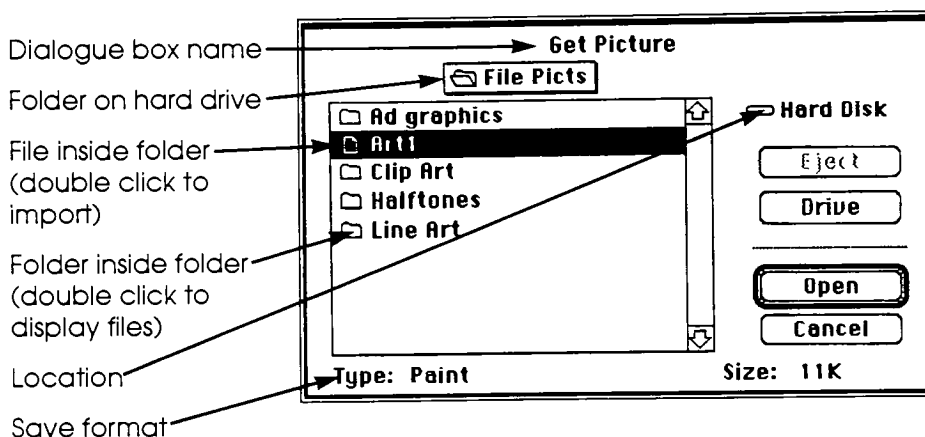
- Select Get Picture under the File Menu. Get Picture can only be selected if a picture box and the editing tool are activated.⁵⁵



- The Get Picture dialog box will appear.
If you are in a file, it lists the files and folders that can be imported into Quark from the location (hard disk or floppy disk) where you opened this file. If you are in a folder at either location, it lists the files in that folder.⁵⁶

A double click on a folder name will open that folder to show you its folders or file names. Folders can be inside folders so double click until the desired file is found.

To change location, one click on the “drive” button transfers you between the disk and hard drive.



- Select the desired file for artwork importation.
The file's save format is displayed in the dialogue box for easy verification.

A double click on a file name will import the art from that file into the activated picture box.

A single click on a file name, then a single click on the “open” button will also import the file.

- The picture box from the Quark document should now display the imported art in the picture box. The imported picture replaces any picture that was previously displayed in the box.

Hints: What Has Happened

The Scanning Process The scanner digitizes the image into a series of pixels by converting light energy to electrical signals. A light is passed over the image and the reflection of the light from the image is passed through a photoreceptor. The photoreceptor converts the light into an electric signal. The intensity of the electric (analog) signal determines the level of grayness of the pixel (digital information) created. Once the image information is in digital form it can be converted into a number of save formats.⁵⁷

Line art Output By selecting Line art Output, MC View takes a level of gray and converts all darker readings to black and all lighter readings to white. The result is each pixel is either black or white.⁵⁸ The gray level can be set automatically or manually (threshold option) for more control.⁵⁹

The TIFF Format TIFF formats are scanner formats. These formats “tag” the image data, rather than leaving it in rasterized (bit-mapped) form, thus the name Tagged Image File Format (TIFF). There are several types of TIFF formats. The formats differ by the amount of data compression that takes place when saving. Data may be compressed for storage and transmission, but is then uncompressed for display and output. Line art works well with data compression.⁶⁰

If a TIFF format is selected for importation into Quark it must be scanned as line art.⁶¹ Because line art does not usually require a great deal of memory, TIFF Uncompressed has been selected as the format of choice. However, Line art in compressed TIFF formats import with no noticeable difference in output. The TIFF formats offered by MC View for importing into Quark are listed below in ascending order of memory requirements:

TIFF CCITT—Standard format with high data compression

TIFF Packbits—Standard format with single data compression

TIFF Uncompressed—Standard format without data compression⁶²

The EPSF Import EPSF is the most memory intensive format. Information is stored as mathematical equations instead of in pixel form, then converted into pixel form at the printer. This allows for greater precision and is considered an object orientated format. However files cannot be altered once they are saved in the EPSF format.⁶³

EPSF actually creates two formats. Both formats are contained in one file, displayed by one icon on the desktop. One format is seen on the screen and the other is seen as the printout when using higher resolution devices.

The first format is a PICT format, which is the “preview” picture seen in the picture box on the screen. This PICT format file is used by Quark for placement, scaling, and cropping. It is not an accurate representation of the output. It is usually heavier with much detail filling in. It is also the information low resolution non-PostScript printers (such as ImageWriters) use to print. The PICT format has smaller memory requirements and is saved with the Quark document after it is imported.⁶⁴

The second portion of the file is the PostScript format. This is the more accurate output printed by PostScript printers. The PostScript information is not saved with the Quark document, but is accessed from the original MC View file when the Quark document is printed.⁶⁵

Other Formats Quark is also capable of importing Picture (PICT) and Paint formats. A disadvantage is the Quark Style menu is not available for these formats (and EPSF), eliminating several useful options from Quark.⁶⁶ Another disadvantage is the Paint format cannot be scaled, has size limitations, and becomes truncated.⁶⁷

Hints: What To Look For

- Get Picture Display Missing**
- If Get Text displays under the File menu instead of Get Picture then:
A text box is selected. Deselect the text box and activate a picture box.⁶⁸
 - If Get Picture is shaded instead of solid then:
The wrong tool is selected. Activate the edit tool.⁶⁹

Desired Files Missing from Get Picture Display

- If the desired MC View file does not display in the Get Picture dialogue box then:

The file may reside in a different folder or it may not be resident on the hard disk or floppy disk. Use the Find File function found under the Apple menu to locate it. If the file is not found then it must be installed on the hard disk or diskette.

The file may be saved in the wrong format. The Get Picture dialogue box will only display files that are in an accepted format for importation (accepted but not necessarily suitable format). Find File will locate the file, but not display the save format. Close the Quark file and quit the application. Go to the location (using Find File) and look for the TIFF or EPSF icon with the appropriate file name in the window on the desktop. The TIFF icon will not indicate whether it is an uncompressed or a compressed version.



MC View TIFF icon



MC View EPSF icon

If the format is incorrect, a double click on the icon will open the file so that the save format can be changed (the application must be resident). However the “new” save can only convert information available from the “old” save and EPSF cannot be converted at all. It may be necessary to rescan the image to regain essential image information that the “old” save did not save. Refer to pages 36–37 for specific examples of resaving to other formats.

Blank Picture Box on Screen

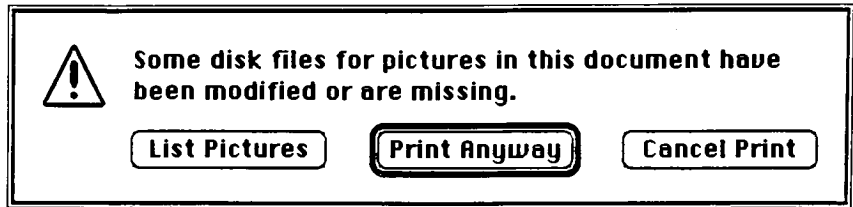
- If the X inside the picture box disappears but the picture box is blank then:

The picture has been imported but its visible portions are not centered in the picture box. Use **⌘-shift-M** to automatically center the picture within the picture box.⁷⁰

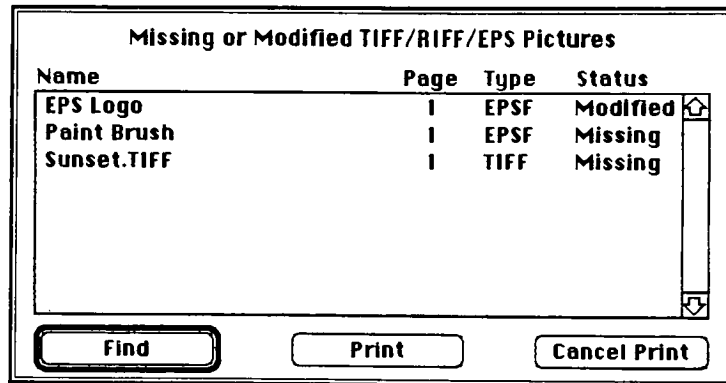
The edit tool may also be selected. The hand portion of the tool will be activated and the picture can be moved by “sliding” it with the hand.⁷¹

**Imported Files
Modified or
Missing**

- If the following dialogue box appears when attempting to print then:



Go to List Pictures to determine if the problem is missing or modified pictures. Another dialogue box will appear listing the file name of the artwork, page location, format of the file, and the missing or modified status.⁷²



Modified Picture

- If the file has been modified then:

When outputting in PostScript, the modified MC View file will be accessed for the printout. The message serves as a warning because the screen preview has not changed unless the picture has been reimported.⁷³

If it is necessary to view the modifications on screen, then reimport the MC View file using Get Picture.

- If the picture is missing then:

Select the missing file from the Missing or Modified dialogue box, then select Find. Quark will locate the file and reestablish the path so it may be accessed for output. It does not reimport the file so the screen preview remains the same.⁷⁴

The artwork can also be imported again under Get Picture.⁷⁵

The dialogue box is a warning that the output will be low resolution (provided a screen preview has appeared in the picture box). Quark is not able to find the original file of the artwork. Since Quark saves only the file name of the TIFF file or PostScript portion of the EPSF file, it must be able to locate and access the original file in order to print the TIFF file or PostScript. When it cannot find the original file it outputs in the screen format that was saved as part of the Quark document.⁷⁶

Files become missing because specific conditions must be observed to enable Quark to locate the original files:

If the Quark document is moved to another system, the original file must be moved to that system also.⁷⁷

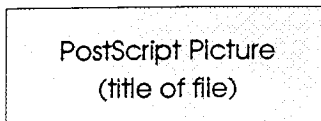
The name of the original file must remain the same as the name used when importing the artwork. Quark will search for the original Get Picture name and will not recognize a new name.⁷⁸

The sequence of the folders that Quark needs to access to locate the original file is called the "path." The path names and their sequence must remain the same as in the original Get Picture.⁷⁹

Quark will search in the Quark document folder if the original path has changed. If an original file needs to be moved, relocate the file in the Quark document folder so Quark can find it.⁸⁰

EPSF PostScript Message

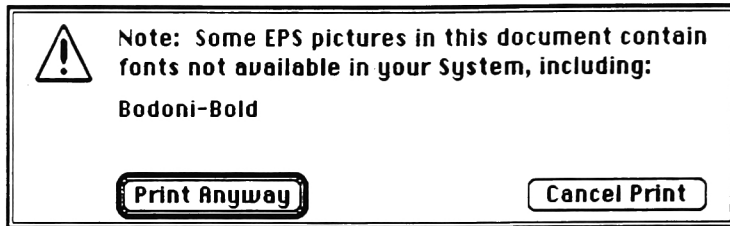
- If after importing an EPSF file the following message appears in a gray shaded picture box then:



The PICT format is too large for screen viewing and has not been imported. The PostScript portion will be accessed for output if a PostScript printer is used, but the PICT portion of the EPSF file is not available for screen viewing or bitmap output from low resolution printers.⁸¹

**Font Substitution
within the
Imported EPSF
File**

- If the following dialogue box appears when attempting to print then:



An imported EPSF file contains screen fonts that are not available on this system. Quark assumes that the printer font is also not available and displays the warning. This may occur if text is added to a scanned file in MC View.

The System file may be checked for the possible missing printer font or select Print Anyway. If the printer font is not available Quark will substitute Courier for the missing font.⁸²

If the printer font is not resident the screen fonts and printer fonts must be installed into the system.

**Magnified
Image**

- If the imported image appears cropped and greatly magnified on the monitor and when printing then:



The Paint format was selected when saved. Only a portion of the image was saved because of size limitations. If the file is resaved in a TIFF or EPSF format without a new scan only a portion of the original image is available for the “new” save, although the original size will return. The image must be rescanned to regain all information. Save the new scan as EPSF or TIFF Uncompressed.

Soft and Diffused Image

- If the imported image appears soft and diffused on the monitor and has gray tones when printing then:



Contone Output was selected as the scanning format. The Contone file cannot be used as line art. The image must be rescanned, selecting Line art Output, then saved in the TIFF Uncompressed or EPSF format.

Note: If the file was a Contone, TIFF Uncompressed then the graymap control curve can be changed to 1–100 and the file resaved. This eliminates mid-tones but the output is not clean and crisp.

Screened and Diffused Image

- If the imported image appears jagged and coarse on the monitor and appears screened with gray tones when printing then:



Halftone Output was selected as the scanning format. The Halftone file cannot be used as line art. The image must be rescanned, selecting Line art Output, then saved in the TIFF Uncompressed or EPSF format.

Considerations: Before and After Integration

Although many of the functions and tools in Quark and MC View are specialized and unique to the particular program, several may appear to overlap or handle similarly. The user is faced with the decision in which program to apply the overlapping functions. The reasons to work in one program over another vary. They depend upon whether both programs are available to use, whether the programs can address the save format of the file, the results desired, and differences in how the similar functions work. Overlapping functions and tools from Quark and MC View are discussed in the following pages.

Scaling Scaling may be done in MC View when scanning or in Quark, regardless of the save format. The quality of scaling will be the same from both programs.

In MC View, time is saved by scaling during the scan, but the final image size must be known. If the final image size is not known then scaling in Quark is the only option. However the results of scaling in Quark are displayed on the screen and allow for quick changes when playing with layout sizes.

If memory requirements are the primary consideration, especially for the memory intensive EPSF format, the choice of programs would depend upon the size of the final image. When scaling larger in MC View more memory is used and the better choice may be to scale in Quark. The opposite would be true of scaling smaller.

Quark also allows disproportionate scaling, which is not offered in MC View.

Duplicating In Quark, the entire picture box and its contents are duplicated using the Items menu—Duplicate function. Multiple duplication is possible with the Step and Repeat function. This function controls quantity and placement of the duplication in equal increments horizontally and/or vertically. Once duplicated, the boxes are separate entities and can be arranged independently.

Duplicating entire images in MC View is not always feasible. It is actually a cutting and pasting operation and should be used when individual elements need to be duplicated. The duplicated elements and their placement become part of the image file. If the entire image must be duplicated in MC View there must be enough white space to hold the copied image, since what is underneath will be replaced by the image on top.

The quality of the duplications will be the same from both programs.

Text and Rules In general the same advantages and limitations apply to text and rule tools. Quark is the more versatile program to work in when using these tools. MC View's range of options for these tools are limited.

In MC View text and rules become part of the image file and cannot be separated from the image. When the text and rules are active they may be moved and placed within the image file. However, once they are no longer active, they become part of the image and the information underneath is lost. So cutting and pasting to move text or rules to another location will leave a blank hole at the original location.

In Quark, text and rules are separate entities and not part of the image. Text is contained within text boxes, and text boxes and rules may be moved for placement at any time without disturbing the image underneath. Although the text boxes and rules are not part of the image they may be locked in place so that the picture box and its contents can be treated as a whole unit.

Importing Scanned Images from MC View Plus:

Continuous Tone Images

Save Format for Integration

Considerations Importing scanned graphics is not a simple choice of a correct format versus an incorrect format. Often more than one save format option is available. The available save format options depend on the scanning output selection. Several factors affect the scan output selection and the resulting save format selection. They are:

Modifications:

Are MC View modification options necessary?

Are Quark modification options necessary?

Screen viewing:

Is a good screen representation necessary?

Output Resolution:

Low resolution—Laser printer (under 1000 dpi)

High resolution—Typesetter quality
(over 1000 dpi)

Save Format Options The proper save sequence in MC View Plus involves choices from three separate options. The three options and the available choices are:

Scan selection option:

Halftone Output—modification of the image *is not* possible after scanning. All scaling, tone curve corrections, and halftone screen selection must be chosen before the scan. This provides *optimum* quality for low resolution laser output but limits control of the image in both MC View and Quark. A halftone screen is automatically generated *during the scan*.⁸³

Contone Output—modification of the image *is* possible after scanning in both MC View and Quark. This is suitable for any PostScript output device. The user has control of halftone screening

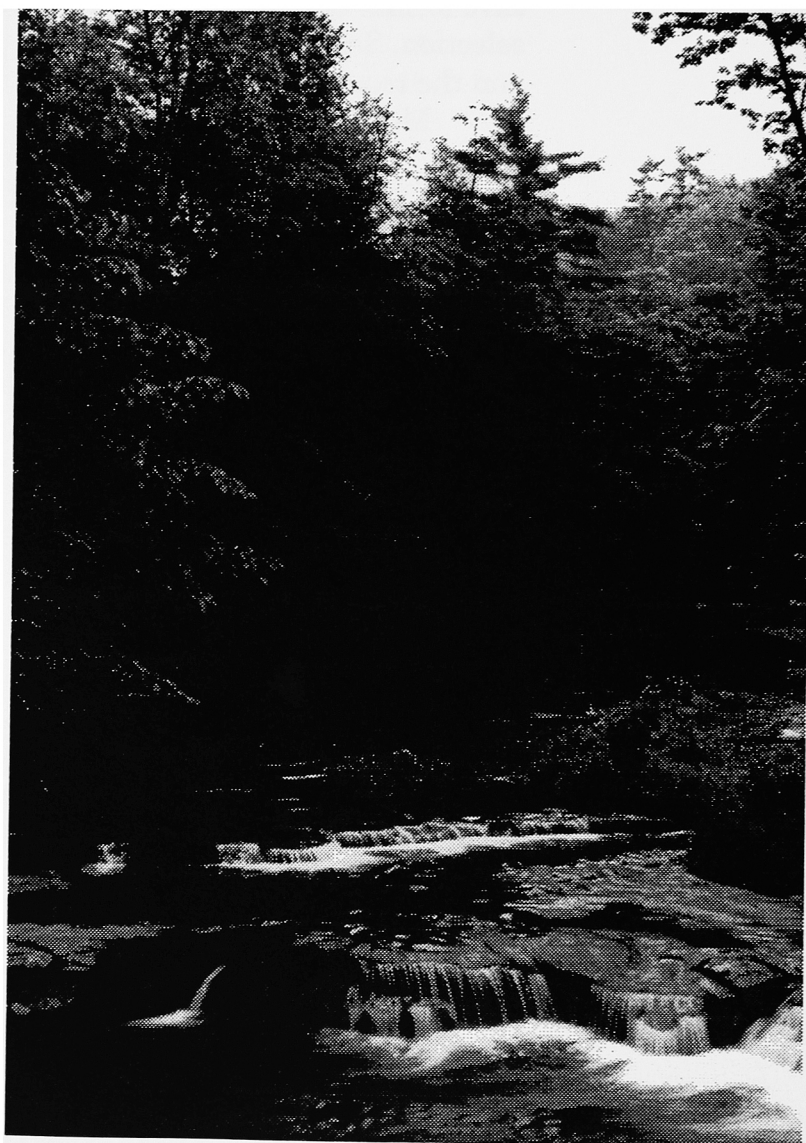
and the resulting gray levels in the program from which the file is being sent to the printer (MC View or Quark). A PostScript halftone screen is generated *during printing*.⁸⁴

End application option: **QuarkXpress**

Save format option:

If **Halftone Output**, then **EPSF** for:

Output on low resolution laser printers *and* if image modifications are not necessary before or after scanning *and* monitor viewing is not necessary.



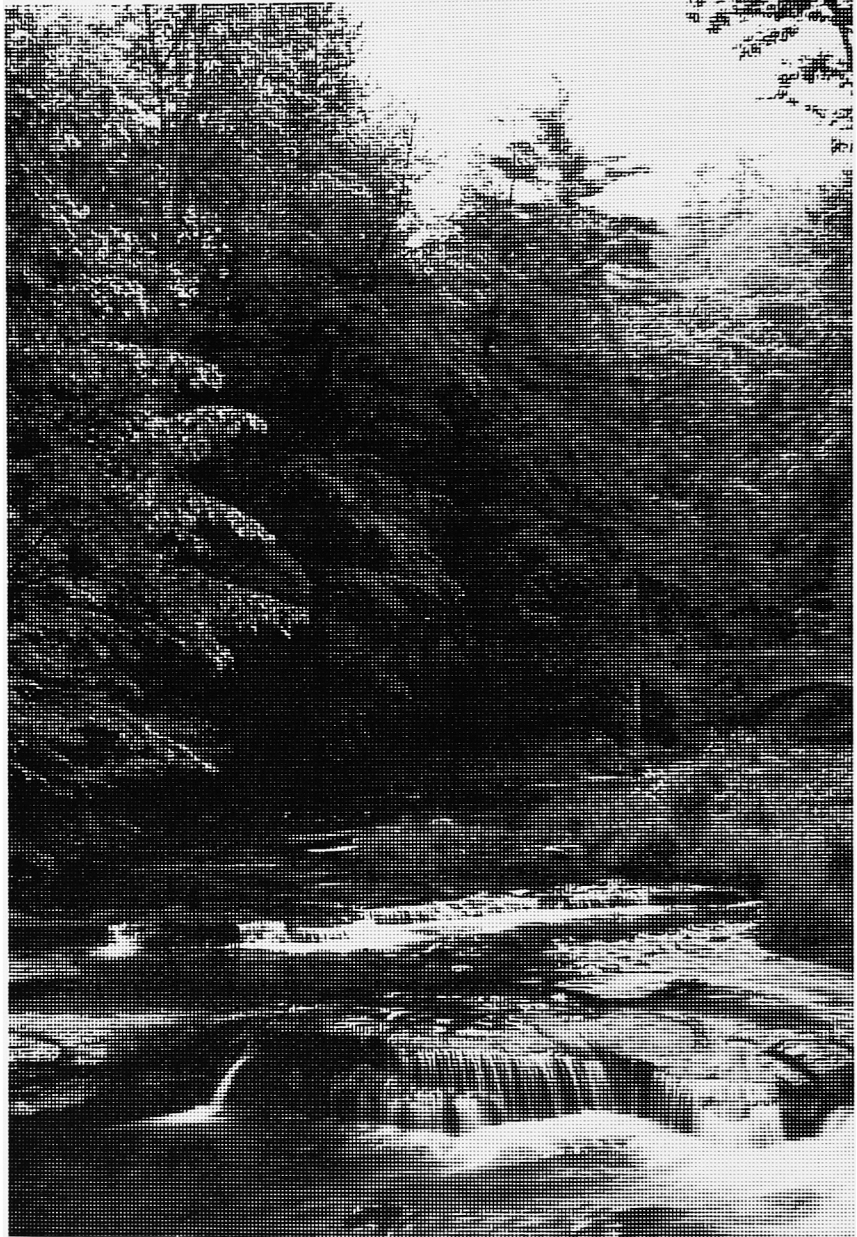
If Contone Output, then TIFF Uncompressed if:

Image modifications are necessary in either MC View or Quark, *and* monitor viewing is important. Output can be laser printer or typesetting resolution.



If **Contone Output**, then **EPSF** if:

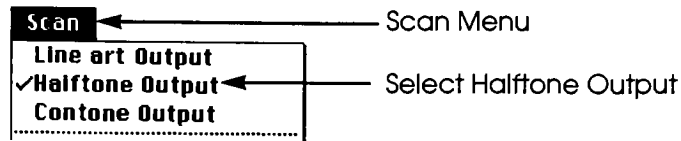
Image modifications can be taken care of in MC View before saving as EPSF, *and* no modifications except scaling are required in Quark, *and* monitor viewing is not important, *and* output is a higher resolution device requiring fine halftone screening.



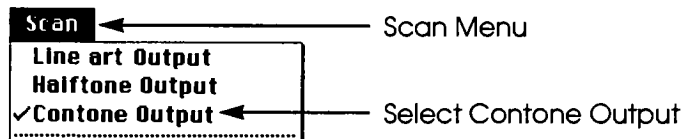
Note: Refer to Hints: What Has Happened for a more detailed discussion of these scanning and saving format combinations (pp. 47–51).

How to Save in MC View Plus

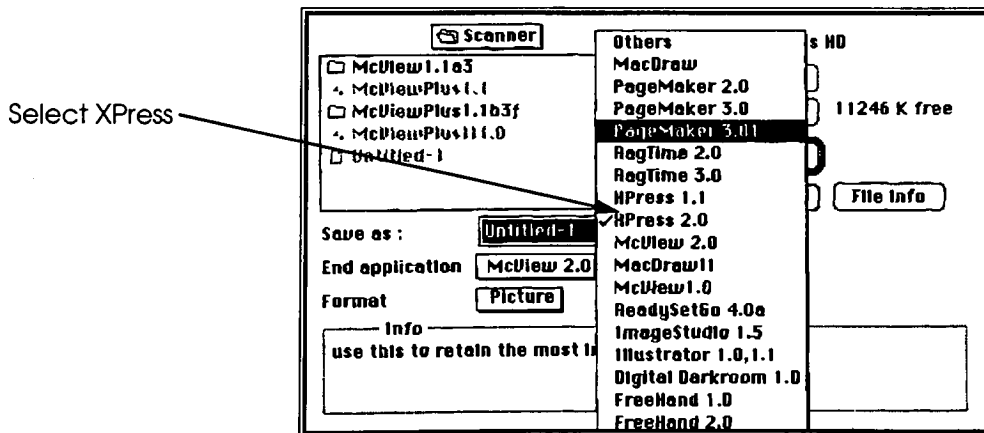
Scan Selections Halftone Output is selected before the initial scan under the Scan menu.⁸⁵ A √ will be placed next to the selected output. Select for halftone screening during scanning. Scan resolution should match output resolution.⁸⁶



Contone Output Contone Output is selected before the initial scan in MC View under the Scan menu.⁸⁷ A √ will be placed next to the selected output. Select for halftone screening during printing.



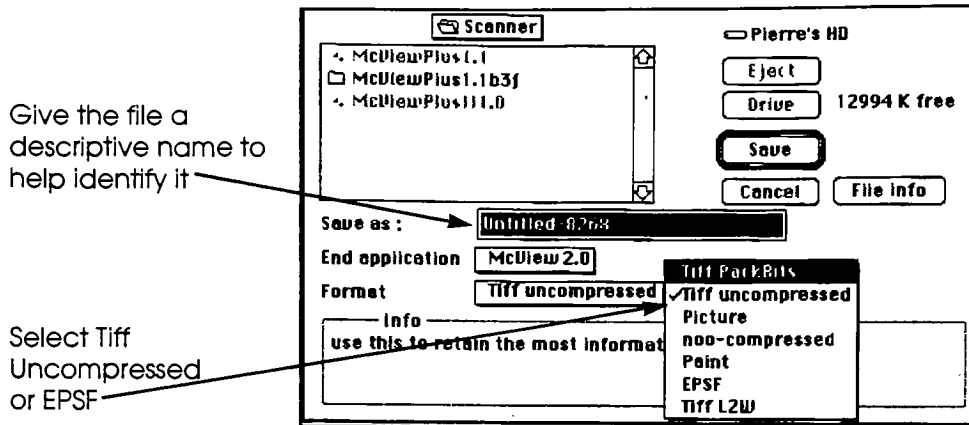
End Application After the scan select Save As under the File menu. This displays End application options from which the target program, XPress (Quark), is selected from the submenu.⁸⁸



Save Formats By selecting Quark as the end application, only the formats Quark will accept for the selected scan output will be displayed in the Format submenu.⁸⁹ If Others or MC View is selected the submenu will display all of the saving formats applicable for that type of scan.

Select EPSF if Halftone Output was selected. Select

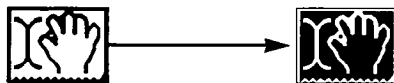
TIFF Uncompressed or EPSF if Contone Output was selected, depending on which format fits your needs.



Note: If the format is selected before the end application, and it is not appropriate to the end application, then the format will jump to another selection. By selecting the end application *before* selecting the format the problem of the format jumping around will be eliminated. Unnoticed format changes may adversely affect the Quark import.

How To Import Continous Tone Images into QuarkXpress

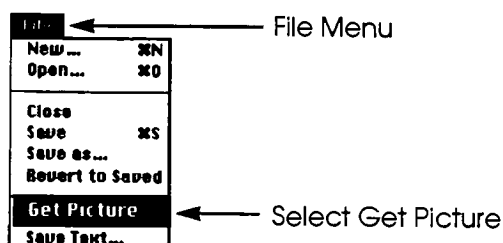
- Select the editing tool from the tool palette and click. The selected tool will become a negative image.⁹⁰



- Create a new picture box or activate a current picture box with a single click of the mouse.⁹¹



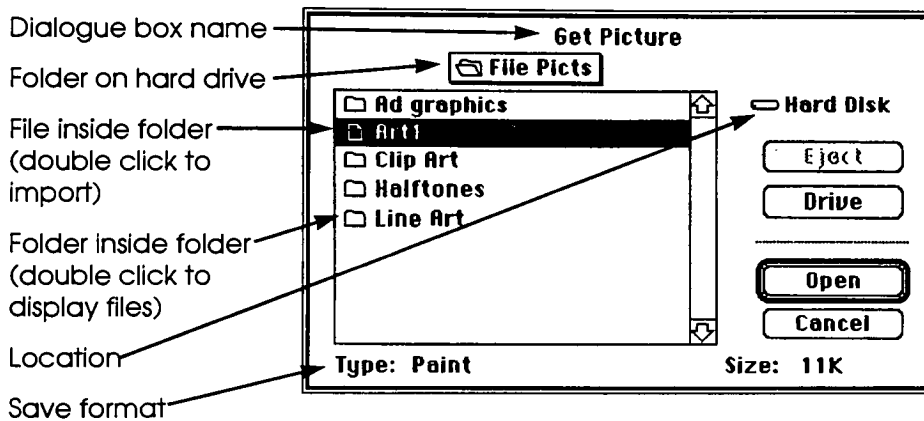
- Select Get Picture under the File Menu. Get Picture can only be selected if a picture box and the editing tool are activated.⁹²



- The Get Picture dialogue box will appear.
If you are in a file, it lists the files and folders that can be imported into Quark from the location (hard disk or floppy disk) where you opened this file. If you are in a folder at either location, it lists the files in that folder.⁹³

A double click on a folder name will open the folder to show display its folders or files. Folders can be inside folders so double click until the desired file is found.

To change location, one click on the “drive” button transfers you between the diskette and hard disk.



- Select the desired file for artwork importation.
Its save format is displayed in the dialogue box.

A double click on a file name will import the art from that file into the activated picture box.

A single click on a file name, then a single click on the “open” button will also import the file.

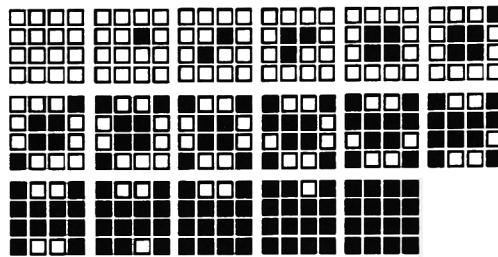
- The picture box from the Quark document should now be displayed with the imported art in the picture box.

Hints: What Has Happened

The Scanning Process

The scanner digitizes the image into a series of pixels by converting light energy to electric signals. A light is passed over the image and the reflection of the light from the image is passed through a photoreceptor. The photoreceptor converts the light into an electric signal.

The intensity of the electric (analog) signal determines the level of grayness of the pixel (digital information) created.⁹⁴ Each pixel is comprised of a matrix of dots that are turned on or off by the laser scanning device. The perceived grayness of the pixel formed by the dots depends upon the number of dots turned on or off. For example, a matrix of 4 x 4 yields 16 dots, thus 17 levels of perceived grayness are possible.⁹⁵



The output device has a set number of dots it is capable of printing, referred to as resolution. Since the resolution of the device remains constant, if the screen ruling becomes finer, less levels of gray are possible. Conversely, more levels of gray are possible with coarser screen rulings. The number of dots is constant but divided differently. Once the image is in digital form it can be converted into a number of save formats.⁹⁶

Halftone Output

The Halftone Output option is intended for low resolution laser printers. When Halftone Output is selected a halftone screen suitable for the scan resolution indicated is generated *during the scan*. The creation of a halftone screen from gray scale information as it is being scanned is an involved mathematical process. It ultimately eliminates successful modification of the image after the scan, including scaling.⁹⁷

Halftone Output with EPSF

This combination gives the closest representation of the original when outputting on a laser printer. Advantages and disadvantages are:

Memory and time requirements usually associated with EPSF files are not as cumbersome when using Halftone output. Screened grayscale information requires less memory than pure grayscale information. The quality of the output is worth the memory this format uses.

Scaling must be done during scanning.⁹⁸

The scanning process tends to exaggerate high contrast originals and darken shadows.⁹⁹ Since no loss in tone occurs when importing this type of scan, tone compensation may be needed in MC View before scanning to compensate for darkened shadows.

The screen display is illegible, eliminating soft proofing. Placement is possible only by aligning edges of the imported file with edges of the picture box.

Proofing can be time intensive. To make changes and proof those changes, the image must be rescanned with the changes, saved, reimported, then printed.

Contone Output

When Contone Output is selected a PostScript screen is generated *during printing*. Since the halftone screen is generated later, the scanned image is pure gray scale information. The altered and saved file is translated into a screened image only when the file is sent to the printer. Therefore screening decisions may be made at the point of printing. The image may be modified in MC View and Quark after the scan.¹⁰⁰

Contone Output with TIFF Uncompressed

This combination is the best overall selection when the image files need extensive modification. The advantages and disadvantages are:

All of MC View and Quark's modification options are available after scanning and saving.^{101, 102}

The screen display is very good, allowing convenient soft proofing when modifying and placing the image.

A significant overall loss of tone occurs when a Contone file is imported into Quark. Tone compensation can be made in MC View or Quark.

The halftone screen is less noticeable than with EPSF output, when outputting on a laser printer.

Contone files require more memory than halftone files because pure gray scale information is saved. However Contone, TIFF Uncompressed files

require approximately one-half the memory requirements of Contone, EPSF files.

Contone Output with EPSF

This combination is the best selection if the output device is high resolution and fine screening rulings are desired. Advantages and disadvantages are:

The file may be modified after the original scan, before the EPSF save. Files cannot be altered (except scaling) in MC View or Quark once saved as EPSF.^{103, 104}

An overall loss of tone occurs when a Contone file is imported. Compensate *before* saving as EPSF.

The screen display is illegible, eliminating soft proofing. Placement is possible only by aligning edges of the imported file with edges of the picture box.

Hard proofing can be time intensive. To make changes and proof those changes the image must be rescanned with the changes, saved, reimported, then printed.

The halftone screen is sharper in an EPSF file, making it highly visible in output from a low resolution printer. The EPSF format should be reserved for high resolution output where finer halftone screening is possible without sacrificing gray levels.

Contone files require much more memory and printing time than halftone files because pure gray scale information is saved. The EPSF format is also memory intensive. A Contone scan with the EPSF save format is the most memory intensive combination.

The TIFF Format

TIFF formats are scanner formats. These formats “tag” the image data, rather than leaving it in rasterized (bit-mapped) form, thus the name Tagged Image File Format (TIFF). There are several types of TIFF formats. The formats differ by the amount of data compression that takes place when saving. Data may be compressed for storage and transmission, but is then uncompressed for display and output. Images with gray scale information such as continuous tone and halftone images do not work well with data compression. Do *not* compress TIFF files.¹⁰⁵

TIFF files display a low resolution representation of the image on screen. This screen format has smaller memory requirements and is saved with the Quark document after it is imported. The high resolution information is retained in the original file. This high resolution information is accessed from the original MC View file when the Quark document is printed.¹⁰⁶

The EPSF Format

EPSF is the most memory intensive format. Information is stored as mathematical equations instead of in pixel form. This allows for greater precision and is considered an object-orientated format.¹⁰⁷ EPSF actually creates two formats. Both formats are contained in one file, displayed by one icon when viewed on the desktop. One format is seen on the screen and the other is seen as the printout when using higher resolution devices.

The first format is a PICT format, which is the “preview” picture seen in the picture box on the screen. This PICT format file is used by Quark for placement, scaling, and cropping. It is not a good representation of the output because it cannot display gray tones. Therefore the display is often predominately black with great loss of detail. It is also the information which low resolution non-PostScript printers (such as ImageWriters) use to print. The PICT format has smaller memory requirements and is saved with the Quark document after it is imported.¹⁰⁸

The second portion of the file is the PostScript format. This is the more accurate output printed by PostScript printers. The PostScript information is not saved with the Quark document, but is accessed from the original Illustrator file when the Quark document is printed.¹⁰⁹

Hints: What To Look For

Get Picture Display Missing

- If Get Text displays under the File menu instead of Get Picture then:

A text box is selected. Deselect the text box and activate a picture box.¹¹⁰

- If Get Picture is shaded instead of solid then:
The wrong tool is selected. Activate the edit tool.¹¹¹

Desired Files Missing from Get Picture Display

- If the desired MC View file does not display in the Get Picture dialog box then:

The file may reside in a different folder or it may not be resident on the hard disk or floppy disk. Use the Find File function found under the Apple menu to locate it. If the file is not found then it must be installed on the hard disk or diskette.

The file may be saved in the wrong format. The Get Picture dialogue box will only display files that are in an accepted format for importation. (accepted but not necessarily suitable format) Find File will locate, but not display the save format. Close the Quark file and quit the application. Go to the location (using Find File) and look for the TIFF or EPSF icon with the appropriate file name in the window. The TIFF icon will not indicate whether it is uncompressed or a compressed version.



MC View TIFF icon



MC View EPSF icon

If the format is incorrect, a double click on the icon will open the file so that the save format can be changed (the application must be resident). However the “new” save can only convert information available from the “old” save. It may be necessary to rescan the image to regain essential image information that the “old” save did not save. Also, EPSF formats cannot be resaved as other formats. Refer to pages 55–62 for more specific examples of resaving to other formats.

Blank Picture Box on Screen

- If the X inside the picture box disappears but the picture box is blank then:

The picture has been imported but its visible portions are not centered in the picture box. Use **⌘-shift-M** to automatically center the picture within the picture box.¹¹²

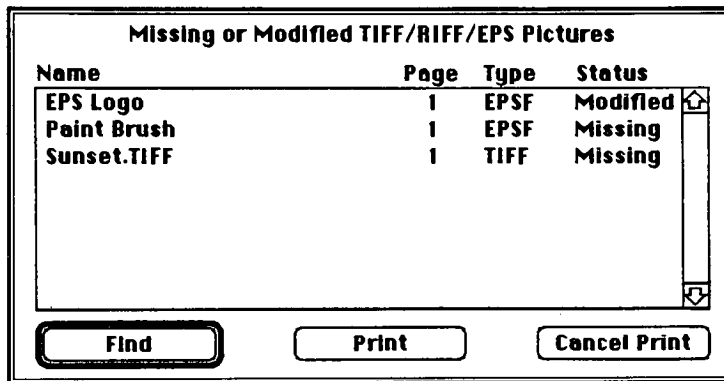
The edit tool may also be selected. The hand portion of the tool will be activated and the picture can be moved by “sliding” it with the hand.¹¹³

**Imported Files
Modified or
Missing**

- If the following dialogue box appears when attempting to print then:



Go to List Pictures to determine if the problem is missing or modified pictures. Another dialogue box will appear listing the file name of the artwork, page location, format of the file, and the missing or modified status.¹¹⁴



Modified Picture

- If the picture has been modified then:
When outputting in PostScript, the modified MC View file will be accessed for the printout. The message serves as a warning because the screen preview has not changed unless the picture has been reimported.¹¹⁵

If it is necessary to view the modifications on screen, then reimport the MC View file using Get Picture.

Missing Picture

- If the picture is missing then:
Select the missing file from the Missing or Modified dialogue box, then select Find. Quark will locate the file and reestablish the path so it may be accessed for output. It does not reimport the file so the screen preview remains the same.¹¹⁶

The artwork can also be imported again under Get Picture.¹¹⁷

The dialogue box is a warning that the output will be low resolution (provided a screen preview has appeared in the picture box). Quark is not able to find the original file of the artwork. Since Quark saves only the file name of the TIFF file or PostScript portion of the EPSF file, it must be able to locate and access the original file in order to print the TIFF file or PostScript. When it cannot find the original file it outputs in the screen format that was saved as part of the Quark document.¹¹⁸

Files become missing because specific conditions must be observed to enable Quark to locate the original files:

If the Quark document is moved to another system, the original file must be moved to that system.¹¹⁹

The name of the original file must remain the same as the name used when importing the artwork. Quark will search for the original Get Picture name and will not recognize a new name.¹²⁰

The sequence of the folders that Quark needs to access to locate the original file is called the "path." The path names and their sequence must remain the same as in the original Get Picture.¹²¹

Quark will search in the Quark document folder if the original path has changed. If an original file needs to be moved, relocate the file in the Quark document folder so Quark can find it.¹²²

EPSF PostScript Message

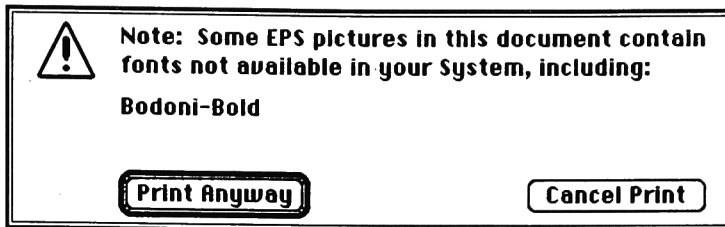
- If after importing a EPSF file the following message appears in a gray shaded picture box then:

PostScript Picture
(title of file)

The PICT format is too large for screen viewing and has not been imported. The PostScript will be accessed for output if a PostScript printer is used, but the PICT portion of the EPSF file is not available for screen viewing or bitmap output from low resolution printers.¹²³

**Font Substitution
Within the
Imported EPSF
File**

- If the following dialogue box appears when attempting to print then:



An imported EPSF file contains screen fonts that are not available on this system. Quark assumes that the printer font is also not available and displays the warning. This could occur if type is added to a scanned file in MC View.

The System file may be checked for the possible missing printer font or select Print Anyway. If the printer font is not available Quark will substitute Courier for the missing font.¹²⁴

If the printer font is not resident the screen fonts and printer fonts must be installed into the system.

**Illegible Screen
Display,
Good Output**

- If an imported image appears nearly all black and illegible on the monitor but the output is good then:
It is saved in the EPSF format. The screen preview is very poor, but is normal. This format cannot be changed. Rescan if another format is desired.

**Magnified
Display and
Output**

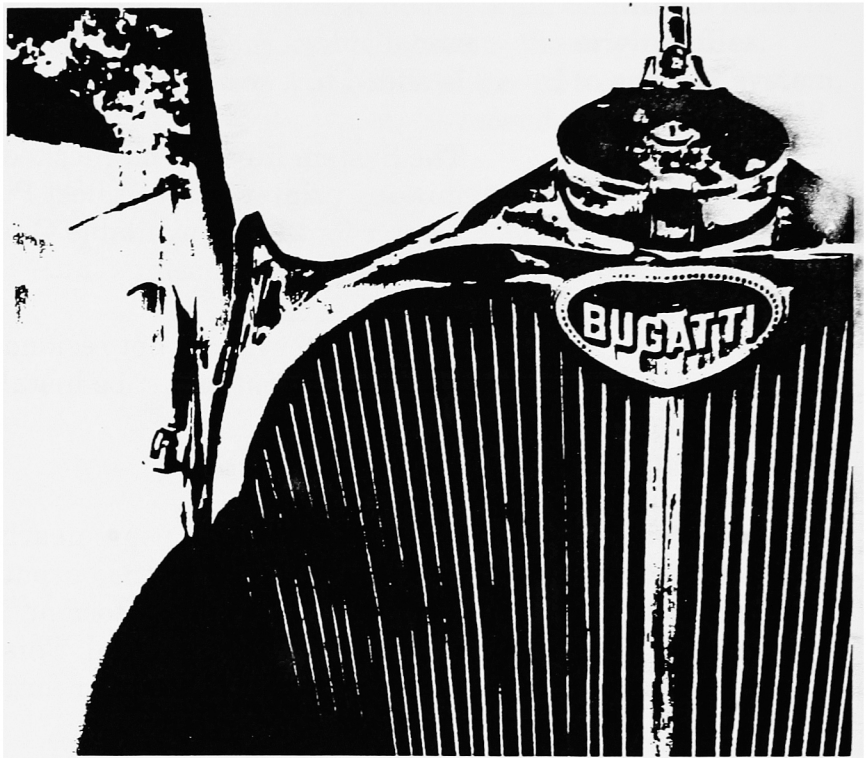
- If the imported image appears very dark with large pixels on the monitor and when printing then:



The Paint format was selected when saving a Halftone scan. Only a portion of the image was saved because the image has been greatly magnified. Rescan the image to regain all image information. Save in the EPSF format if it is a Halftone scan, or in TIFF Uncompressed or EPSF formats if it is a Contone scan.

Missing Midtones

- If an imported image is black and white with no midtones then:



Line art Output was selected as the scanning format or Contone Output was selected but the graymap control was set to eliminate midtones. The image must be rescanned as Halftone or Contone Output to regain gray scale information.

Jaggy Display and Output

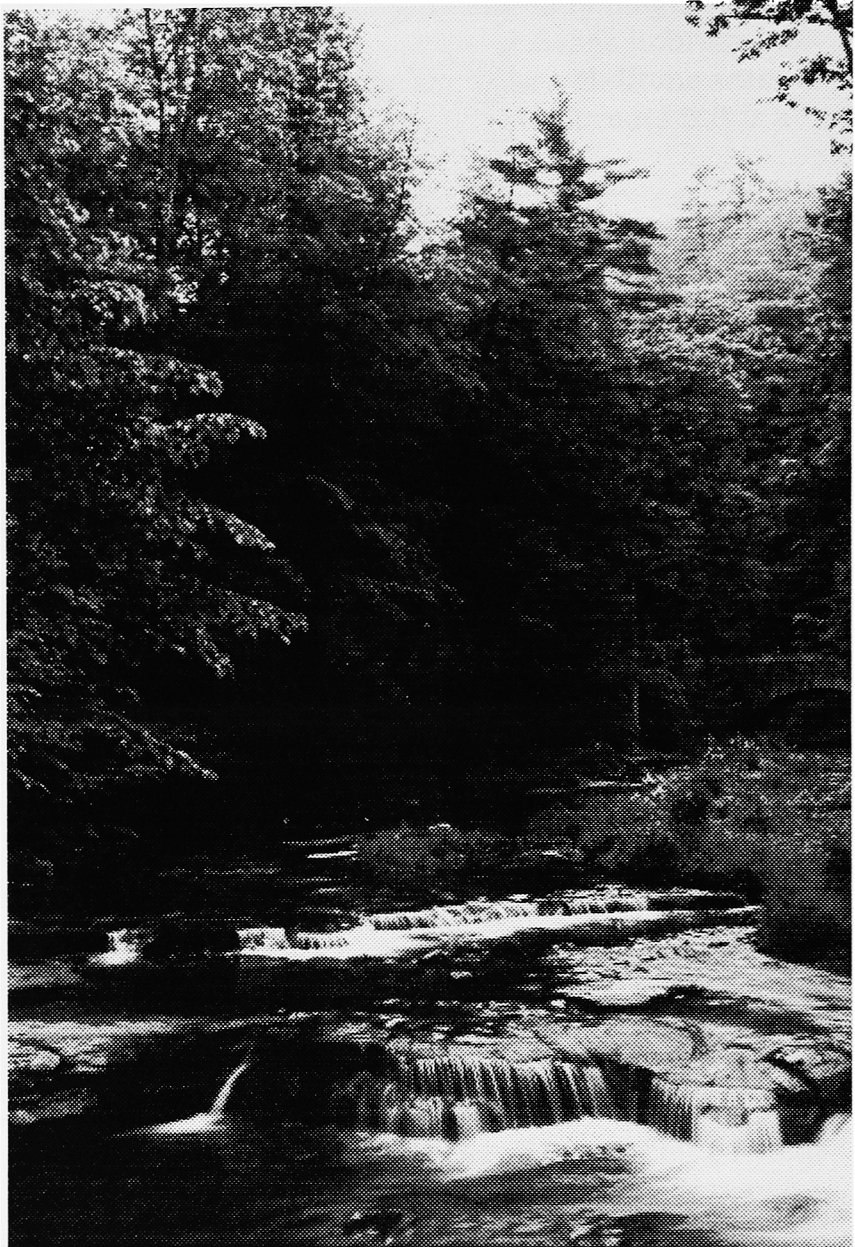
- If the imported image is jaggy but legible on the monitor and jaggy but much lighter in tone when printing then:



Halftone Output and TIFF Uncompressed were selected as the scanning and saving formats. Open the file and resave as the EPSF format under Save As. The tone loss occurs when the file is *imported* into Quark in the TIFF format (Halftone Output), but will not occur when importing the EPSF format (Halftone Output). Since the original TIFF file is not affected, tone compensation is not necessary.

**Loss of Overall
Tone**
(Contone scan,
TIFF format)

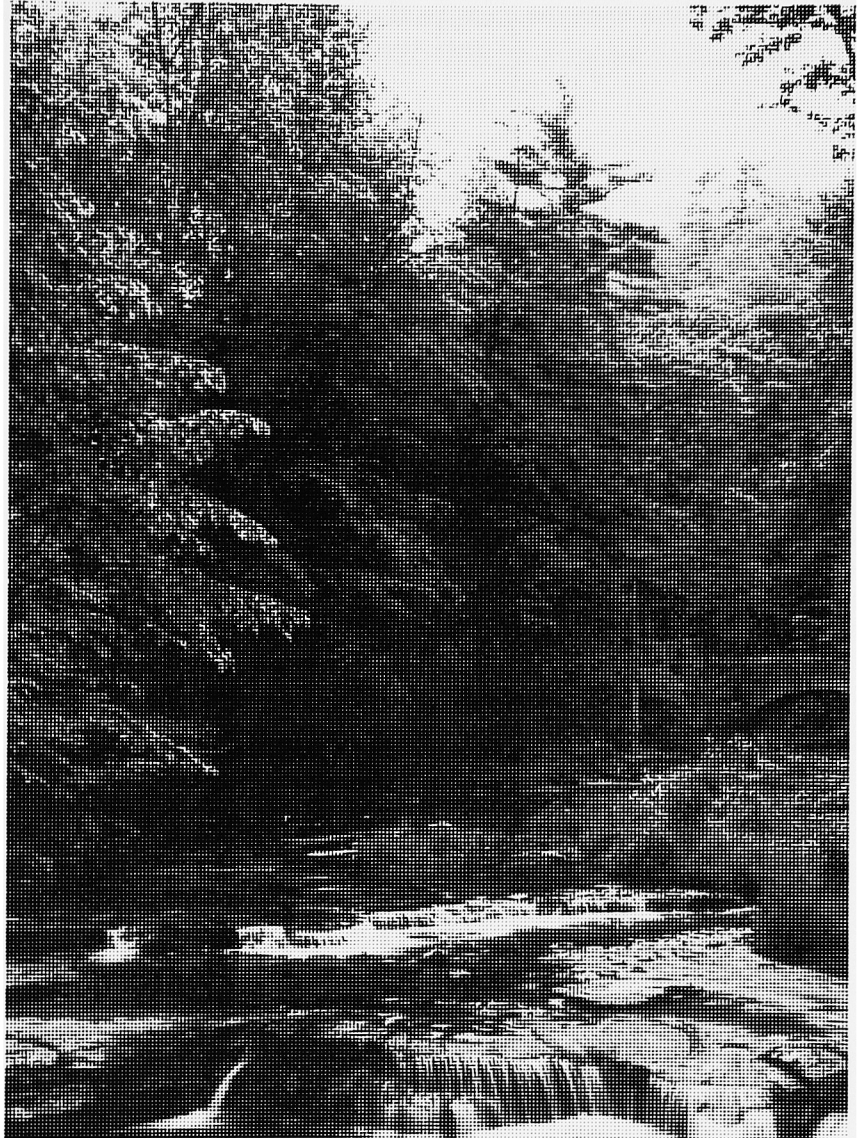
- If the output is too light after importing and if the file is a Contone, TIFF Uncompressed then:



The loss of tone occurs with the *import* of Contone files in both the TIFF and EPSF formats. The original files do not reflect this loss of tone. Adjust the tone curve in Quark if permanent changes to the image file are not necessary. The tone curve may be altered in MC View if the file is to be used in the future and permanent changes to the image are desired.

**Loss of Overall
Tone**
(Contone scan,
EPSF format)

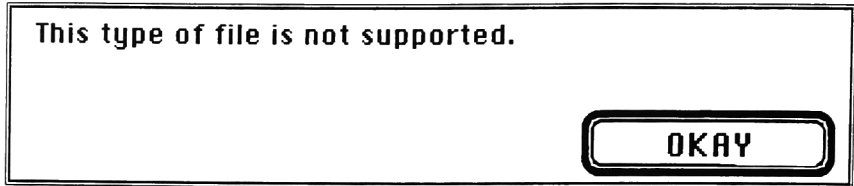
- If the output is too light after importing and if the file is a Contone, EPSF then:



The loss of tone occurs with the *import* of Contone files in both the TIFF and EPSF formats. The original files do not reflect this loss of tone. The tone can only be altered before the EPSF save. Rescan the image, compensate for tone, then save in the EPSF format. The image must be hard proofed because of poor monitor display. This can be a lengthy process. Not only are many steps required, but EPSF files are the most memory intensive and take more time than other files to save, import, and print.

MC View Won't Address File

- If the following message appears when attempting to open a MC View file from the desktop then:

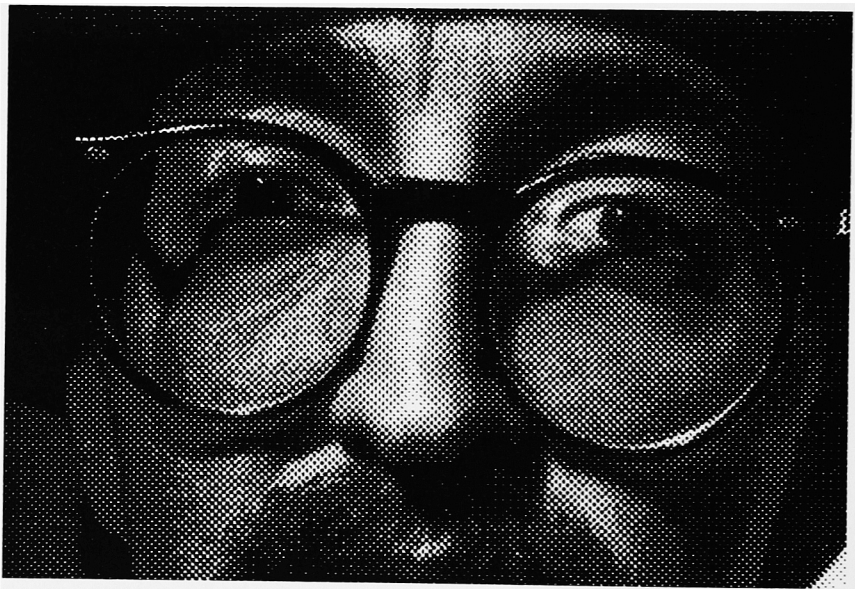


The file is in the EPSF format, which MC View cannot open. The EPSF file may be viewed through a picture box after importing into Quark. Since no modifications can be made to this file, except scaling in Quark, it must be re-scanned if it is not acceptable.

If opening from MC View the files will not be displayed for selection.

Halftone Output is Coarse

- If the printout from a Halftone Output scan is coarsely screened then:



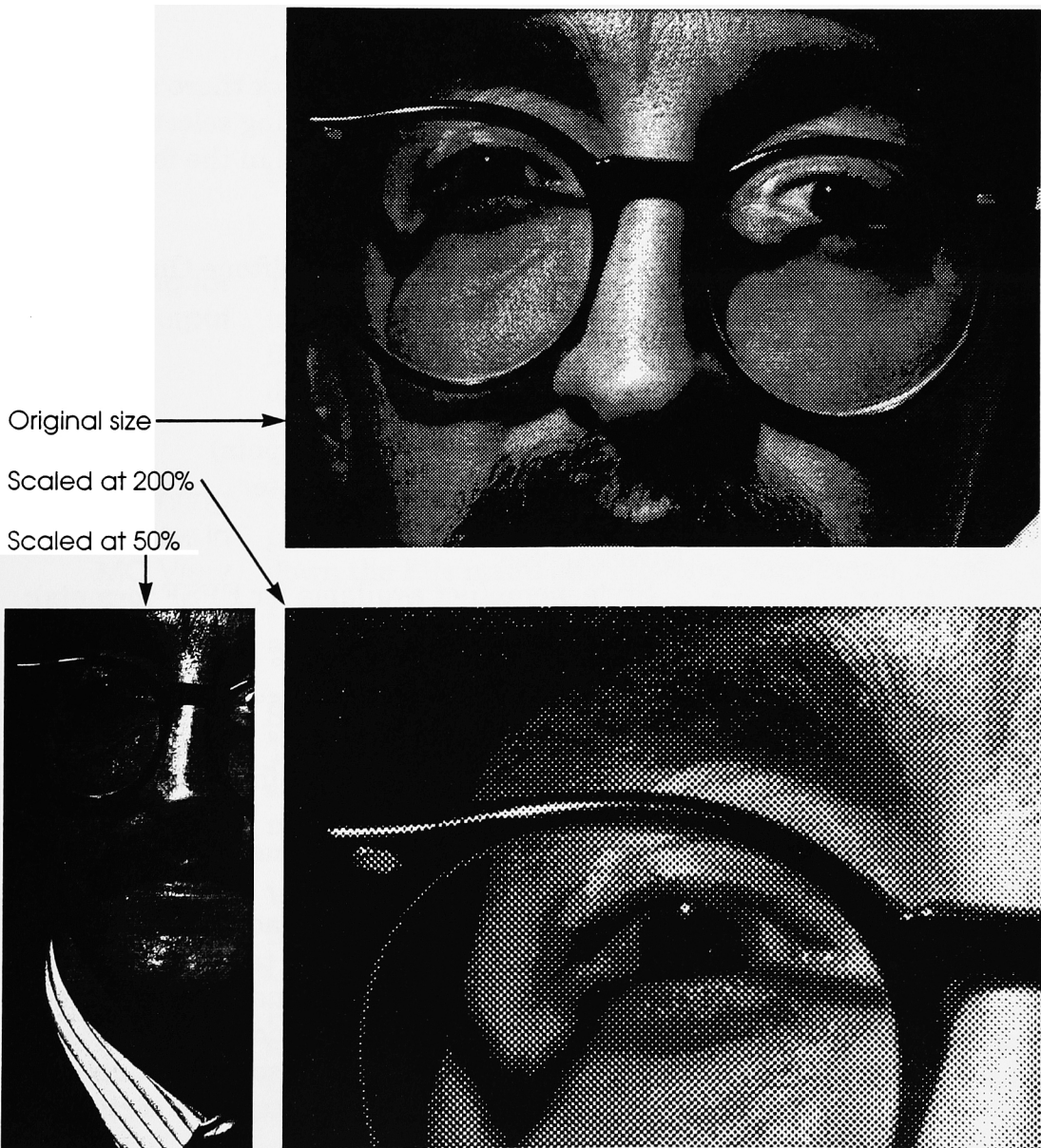
The scan resolution was less than the printer's resolution. The screen that was automatically generated during the scan was intended for a lower resolution printer. Rescan the image, matching the scan resolution to the printer's resolution. Compare the above image, scanned at 200 dpi, to the original sized image on the opposite page, scanned at 400 dpi.

Scaling Halftone Outputs

- If an imported Halftone image has been scaled then:
If the image is scaled larger, the screen is scaled larger also, making it appear coarser and more visible. This makes the image appear lighter in overall tone.

If the image is scaled smaller, the screen is scaled smaller also, making it so fine that detail fills in. The image appears darker in overall tone.

Halftone Output scans should be scaled at the time of the scan.¹²⁵ Rescan the image after determining the proper scaling.



Considerations: Before and After Integration

Although many of the functions and tools in Quark and MC View are specialized and unique to the particular program, several may appear to overlap or handle similarly. The user is faced with the decision in which program to apply the overlapping functions. The reasons to work in one program over another vary. They depend upon whether both programs are available for use, whether the programs can address the save format of the file, the results desired, and differences in how the similar functions work. Overlapping functions and tools from Quark and MC View are discussed in the following pages.

Halftone Screening

When looking at MC View and Quark there appears to be a number of locations where screening selections may be made. Screening options are offered in the following locations:

MC View Plus:

Scanning dialogue box (Halftone Output only):

LaserWriter dot

Display dot

P400PS dot

Line 45

File menu (all scanning outputs)

Page Setup: Proof printer

Page Setup: EPSF file

QuarkXpress:

Style menu (not available for EPSF formats):

Normal

60-Line Line Screen/0°

30-Line Line Screen/45°

20-Line Dot Screen/45°

Other Screen—user defined screens

File menu:

Page set up—user defined lpi

The user wonders where the best place is to make the screening selection, which selection takes precedence, and how it will affect output. In actuality, the user has very few choices to make for this function. The selections actually available depend upon the scanning output selection and the save format. The key is to sorting out

which selections take precedence, even when various menus are active and appear to make options available.

Screening for Halftone Output

The Halftone Output scanning mode generates a halftone screen during the scan. Therefore a screen must be selected before the scan. When the scanning dialogue box appears the user must select the type of halftone screen to be used: LaserWriter dot, Display dot, P400PS dot, or Line 45. The scan resolution should match the resolution of the laser printer being used for output. The scanner automatically creates a halftone screen, with gray levels suitable for the resolution of the laser printer, while scanning.¹²⁶

All other screen options may be ignored in MC View and Quark. This file's screening information overrides all other screening options in MC View or Quark, when in the recommended save format, EPSF.

Screening for Contone Output

The Contone Output scanning mode saves pure grayscale information. A halftone screen is not generated until the file is sent to the printer. Therefore screen selections depend upon the application from which the file is being printed or the save format of the imported image.¹²⁷

Proof Printing Files in MC View

Screen selections must be made in MC View if proof printing from MC View. Set screen preferences by pulling down the File menu and selecting Page Setup, Proof Printer. All Contone files printed from the MC View application will display the proof printer screen.

Printing Files in Quark: Contone, TIFF Uncompressed

Screen information does not come over with imported TIFF files, only grayscale information. Quark sends the screening requirements to the printer, so screen selections must be made in Quark.

When Quark imports TIFF images, the Style menu will be active. Several preset screens are available, as well as Other screens, which allows the user to define the screen parameters.¹²⁷ The lpi of the Normal screen option is also user defined. It may be changed by selecting Page Setup under the File menu. Find the Halftone screen box

and type the number of lpi desired, then click on Okay. Only the lpi of the Normal screen will be changed.

Printing Files in
Quark:
Contone, EPSF

Since EPSF files cannot be altered once saved, the screen selection is made in MC View and that screen information is saved with the image file. Quark cannot alter the screen information that has been imported with the EPSF file. The screen is defined in MC View by selecting Page Setup under the File menu, then selecting EPSF file from the pull down menu. The image must be rescanned if the original screen selection needs to be changed.

Note: The user may change EPSF file screen selections, proof print, and wonder why the Proof printer selection takes precedence when printing EPSF images from MC View. The reason is the file may have been saved as EPSF, but has not been closed. TIFF is a scanner format and the TIFF information is not converted to EPSF until the file is closed. The proof print is a representation of the original scanner format—TIFF Uncompressed. EPSF files cannot be reopened in MC View once they have been closed because MC View does not address the EPSF format. However, once the EPSF file has been saved and closed, the EPSF screen information has been irrevocably saved with the file and will go with it into Quark.

The following chart will aid users in making the screening selections in the appropriate location and at the proper time.

Type of Scanned File	Where to Select a Halftone Screen	
	MC View Plus	QuarkXpress
Halftone Output EPSF	Must select before scanning from Scanning Dialogue Box	Not available for EPSF
Contone Output TIFF Uncompressed	Select from Page Setup: Proof Printer (File menu) if printing from MC View	Select from Style Menu if printing from Quark
EPSF	Select from Page Setup: EPSF File if printing from Quark (the screen is saved and imported with with the file)	Not available for EPSF

Scaling Scaling must be done in MC View when scanning. It is important to know the final image size before scanning so the proper calculations can be made for the scan.¹²⁹
Halftone Output

Contone Output Scaling may be done in MC View when scanning or in Quark, regardless of the save format. The quality of scaling will be the same from both programs. In both programs scaling smaller will result in a loss of resolution. Scaling larger yields some distortion.¹³⁰ Excessive scaling should be avoided.

In MC View, time is saved by scaling during the scan, but the final image size must be known. If the final image size is not known then scaling in Quark is the only option. However scaling in Quark allows the results to be displayed on the screen immediately. This permits changes to be viewed quickly when playing with layout sizes.

If memory requirements are the primary consideration, especially for the memory intensive EPSF format, the choice of programs would depend upon the size of the final image. When scaling larger in MC View more memory is used and the better choice may be to scale in Quark. The opposite would be true of scaling smaller.

Quark also allows disproportionate scaling, which is not offered in MC View.

Duplicating In Quark, the entire picture box and its contents are duplicated using the Items menu—Duplicate function. Multiple duplication is possible with the Step and Repeat function. This function controls quantity and placement of the duplication in equal increments horizontally and/or vertically. Once duplicated, the boxes are separate entities and can be arranged independently.

Duplicating images in MC View is not always feasible. It is actually a cutting and pasting operation, and should be used when individual elements need to be duplicated. The duplicated elements and their placement become part of the image file. If the entire image must be duplicated in MC View there must be enough white space to hold the copied image, since what is underneath will be replaced.

The quality of the duplications will be the same from both programs.

Text and Rules In general the same advantages and limitations apply to text and rule tools. Quark is the more versatile program to work in when using these tools. MC View's range of options for these tools are limited.

In MC View text and rules become part of the image file and cannot be separated from the image. When the text and rules are active they may be moved and placed within the image file. However, once they are no longer active, they become part of the image and the information underneath is lost. So cutting and pasting to move text or rules to another location will leave a blank hole at the original location.

In Quark, text and rules are separate entities and not part of the image. Text is contained within text boxes, and text boxes and rules may be moved for placement at any time without disturbing the image underneath. Although the text boxes and rules are not part of the image, they may be locked in place so that the picture box and its contents can be treated as a whole unit.

Contrast or Tone Compensation Controls When looking at MC View and Quark there appears to be a number of locations where contrast or tone modifications may be made. However the availability is dependent upon the scan output and save formats used.

Halftone Output, EPSF Tone compensation is only available before scanning in MC View in the scanning dialogue box. The user selects tone curves by choosing options such as Light original, Dark original, Brighten shadows, etc.¹³¹ Other contrast options are not active after scanning in MC View or after importing in Quark.¹³²

Contone Output, TIFF Uncompressed The important consideration when importing a Contone file is that an overall loss of tone occurs with the import. Contrast control is offered in MC View under the View menu—Graymap control option.¹³³ Users can compensate for the tone loss while still in the MC View program, but will not see the results until it is imported into Quark.

Although the output is similar from both functions, it is easier to alter the tone curve in Quark. The user can view the tone loss, which occurred with the import, on the monitor in Quark and can view adjustments immediately. Quark offers extensive modifications options under the Style menu—Contrast option.¹³⁴

Contone
Output, EPSF

Contrast modifications must be made in MC View before the file is saved and then closed in the EPSF format, because files cannot be altered once converted to the EPSF format.¹³⁵ Before the file is closed it is still in the scanning format—TIFF Uncompressed. The conversion from TIFF to EPSF takes place when the file is closed. MC View will not address the file once it is closed.

Contrast control is offered in MC View under the View menu—Graymap control option.¹³⁶ The same loss of tone that occurs with the Contone TIFF Uncompressed import will occur with the EPSF format. Users can compensate for the tone loss while still in the MC View program, but will not see the results until it is output from Quark. Quark will not activate its Style menu (where the contrast controls are located) to EPSF files.¹³⁷ The image must be rescanned, modified, saved and closed, imported, and output until the desired results are achieved.

Importing Scanned Images from MC View Plus: Halftone Images

Save Format for Integration

Considerations Importing scanned graphics is not a simple choice of a correct format versus an incorrect format. Often more than one save format option is available. The available save format options depend on the scanning output selection. Several factors affect the scan output selection and the resulting save format selection. They are:

Modifications:

Are MC View modification options necessary?

Are Quark modification options necessary?

Screen viewing:

Is a good screen representation necessary?

Output Resolution:

Low resolution—Laser printer (under 1000 dpi)

High resolution—Typesetter quality

(over 1000 dpi)

Save Format Options

The proper save sequence in MC View involves choices from three options. Regardless of the choices made, the Descreen button must be on when scanning. Since the original image is a halftone, descreening will prevent or discourage moire patterns from developing when the printer or scanner creates a halftone screen.¹³⁸ This is the difference between scanning continuous tone and halftone originals. The three options and the available choices are:

Scan selection option:

Halftone Output—manipulation of the image *is not* possible after scanning. All scaling, tone curve corrections, and halftone screen selection must be chosen before the scan. This provides *optimum* quality for low resolution laser output but limits control of the image in both MC View and Quark. A halftone screen is generated *during the scan*.¹³⁹

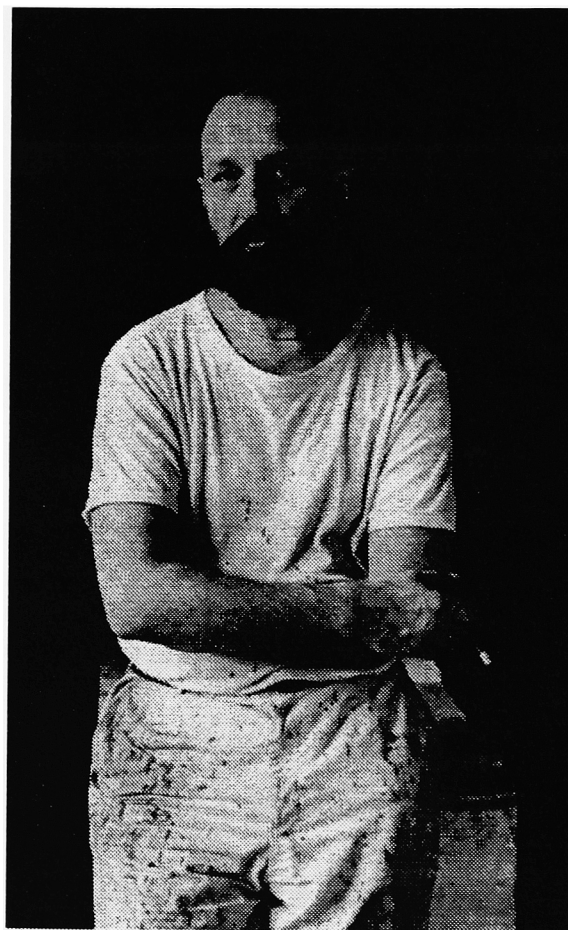
Contone Output—manipulation of the image is possible after scanning in both MC View and Quark. This is suitable for any PostScript output device. The user has control of halftone screening and the resulting gray levels in the program from which the file is being sent to the printer (MC View or Quark). A PostScript halftone screen is generated *during printing*.¹⁴⁰

End application option: **QuarkXpress**

Save format option:

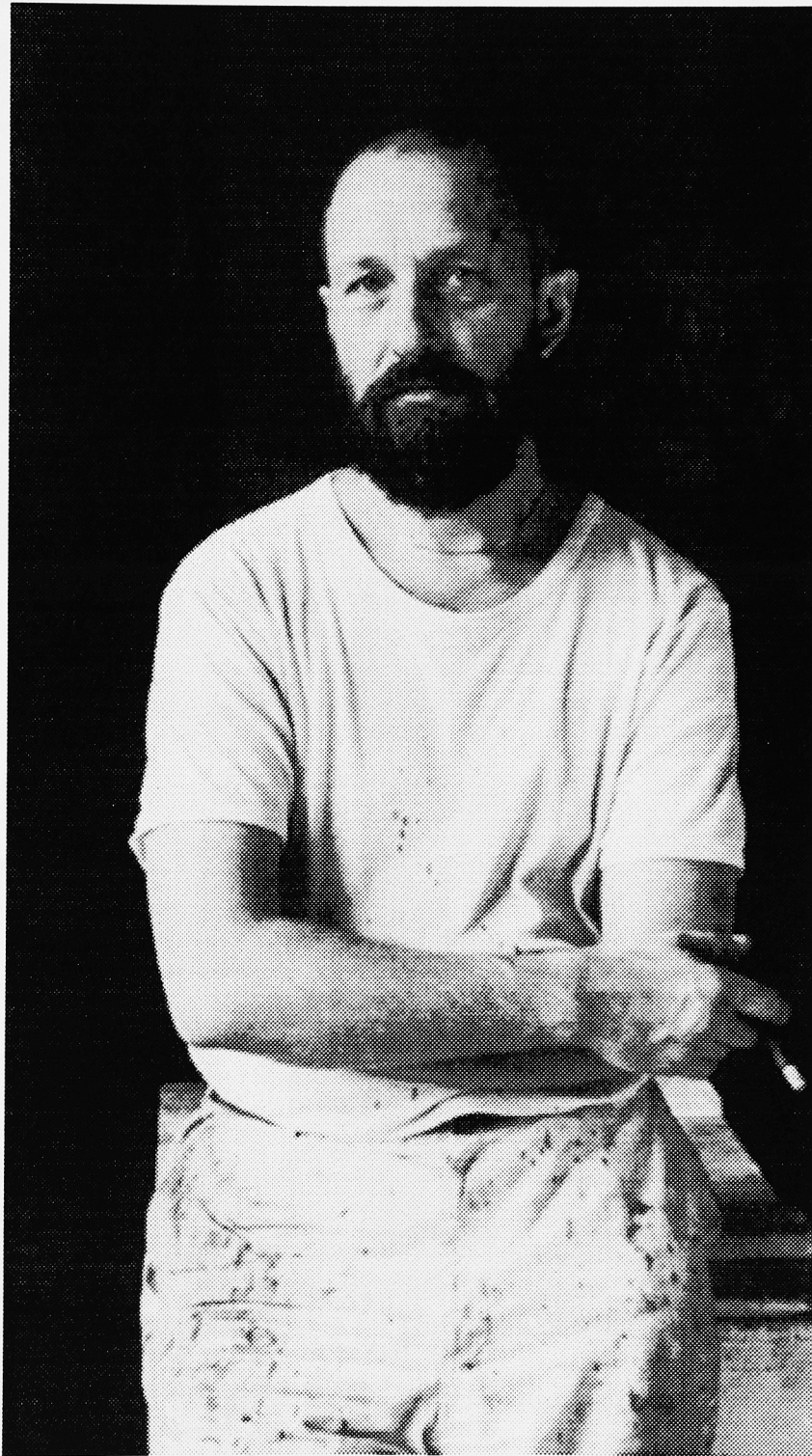
If **Halftone Output**, then **EPSF** for:

Output on low resolution laser printers *and* if image modifications are not necessary before or after scanning *and* monitor viewing is not necessary.



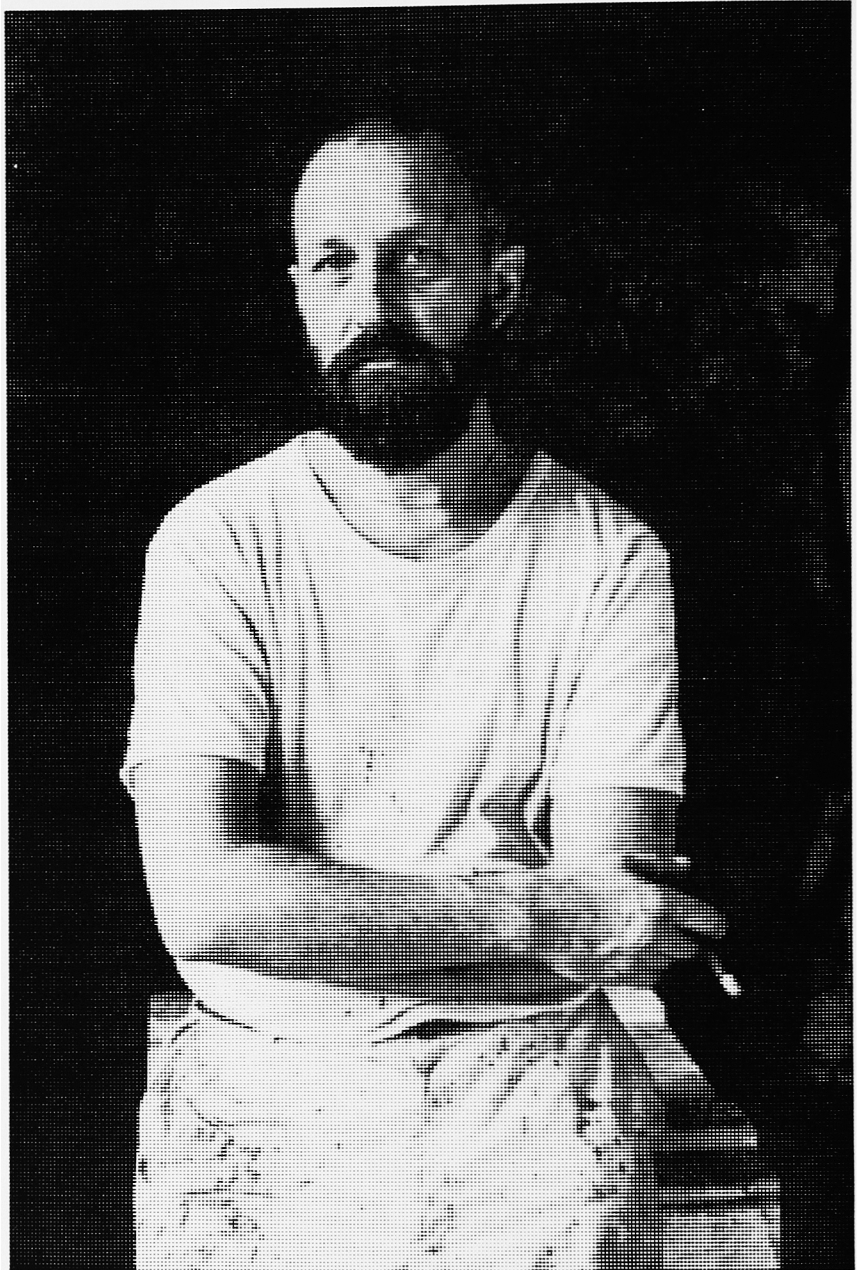
If **Contone Output**, then **TIFF Uncompressed** if:

Image modifications are necessary in either MC View or Quark, *and* monitor viewing is important. Output can be laser printer or typesetting resolution.



If **Contone Output**, then **EPSF** if:

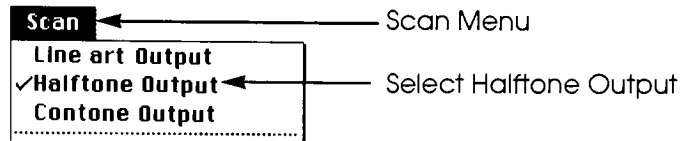
Image modifications can be taken care of in MC View before saving as EPSF, *and* no modifications except scaling are required in Quark, *and* monitor viewing is not important, *and* output is a higher resolution device requiring fine halftone screening.



Note: Refer to Hints: What Has Happened for a more detailed discussion of scanning and saving format combinations (pp. 77–81).

How to Save in MC View Plus

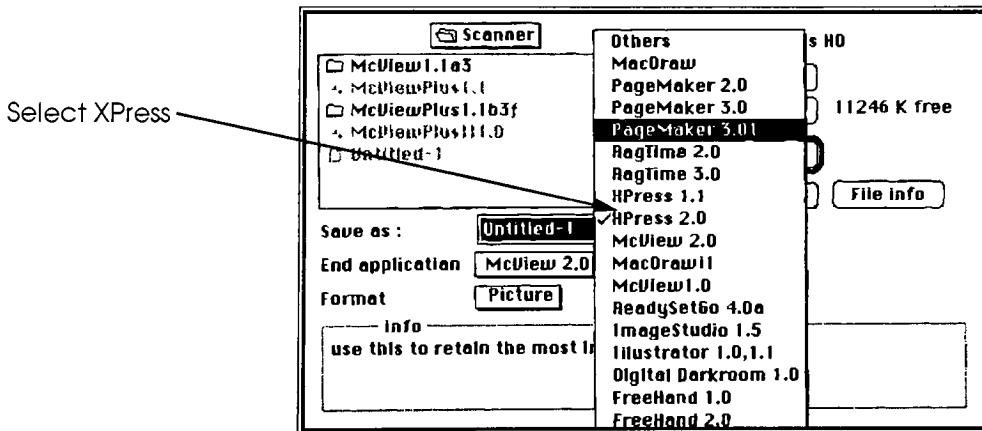
Scan Selections Halftone Output is selected before the initial scan under the Scan menu.¹⁴¹ A ✓ will be placed next to the selected output. Select for halftone screening during scanning. Scan resolution should match output resolution.¹⁴²



Contone Output Contone Output is selected before the initial scan in MC View under the Scan menu.¹⁴³ A ✓ will be placed next to the selected output. Select for halftone screening during printing.



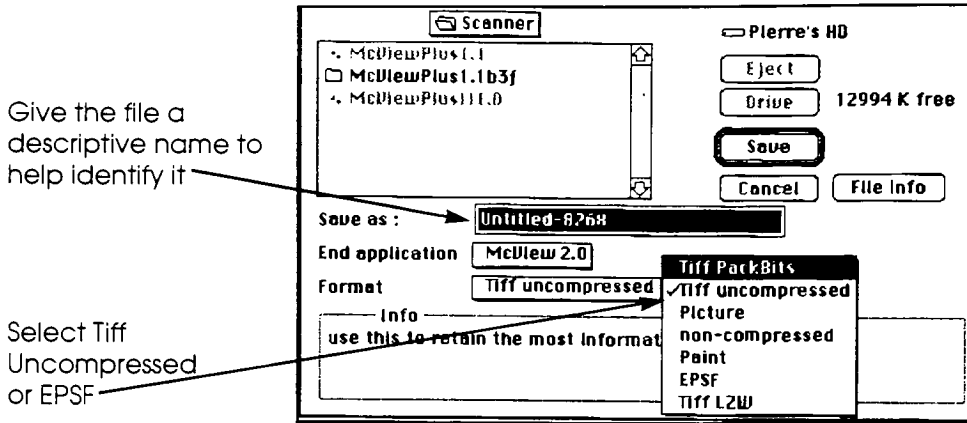
End Application After the scan select Save As under the File menu. This displays End application options from which the target program, XPress (Quark), is selected from the submenu.¹⁴⁴



Save Formats By selecting Quark as the end application, only the formats Quark will accept for the selected scan output will be displayed in the Format submenu.¹⁴⁵ If Others or MC View is selected the submenu will display all of the saving formats applicable for that type of scan.

Select EPSF if Halftone Output was selected. Select

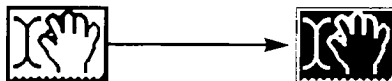
TIFF Uncompressed or EPSF if Contone Output was selected, depending on which format fits your needs.



Note: If the format is selected before the end application, and it is not appropriate to the end application, then the format will jump to another selection. By selecting the end application *before* selecting the format the problem of the format jumping around will be eliminated. Unnoticed format changes may adversely affect the Quark import.

How To Import Halftone Images into QuarkXpress

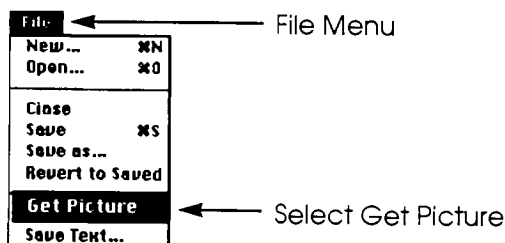
- Select the editing tool from the tool palette and click. The selected tool will become a negative image.¹⁴⁶



- Create a new picture box or activate a current picture box with a single click of the mouse.¹⁴⁷



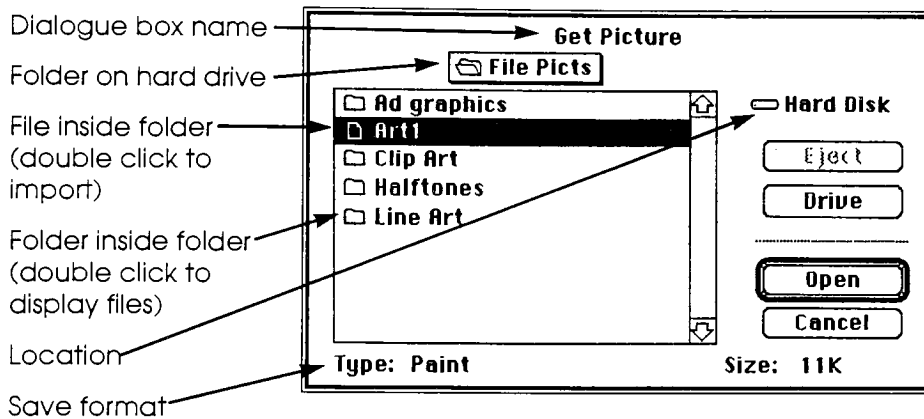
- Select Get Picture under the File Menu. Get Picture can only be selected if a picture box and the editing tool are activated.¹⁴⁸



- The Get Picture dialogue box will appear.
If you are in a file, it lists the files and folders that can be imported into Quark from the location (hard disk or floppy disk) where you opened this file. If you are in a folder at either location, it lists the files in that folder.¹⁴⁹

A double click on a folder name will open the folder to show display its folders or files. Folders can be inside folders so double click until the desired file is found.

To change location, one click on the “drive” button transfers you between the diskette and hard disk.



- Select the desired file for artwork importation.
Its save format is displayed in the dialogue box.

A double click on a file name will import the art from that file into the activated picture box.

A single click on a file name, then a single click on the “open” button will also import the file.

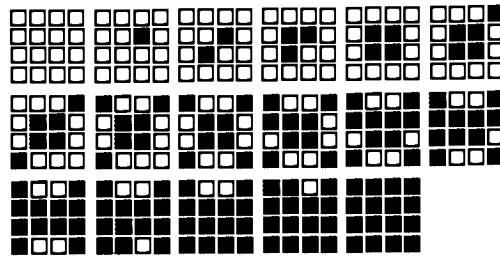
- The picture box from the Quark document should now be displayed with the imported art in the picture box.

Hints: What Has Happened

The Scanning Process

The scanner digitizes the image into a series of pixels by converting light energy to electric signals. A light is passed over the image and the reflection of the light from the image is passed through a photoreceptor. The photoreceptor converts the light into an electric signal.

The intensity of the electric (analog) signal determines the level of grayness of the pixel (digital information) created.¹⁵⁰ Each pixel is comprised of a matrix of dots that are turned on or off by the laser scanning device. The perceived grayness of the pixel formed by the dots depends upon the number of dots turned on or off. For example, a matrix of 4 x 4 yields 16 dots, thus 17 levels of perceived grayness are possible.¹⁵¹



The output device has a set number of dots it is capable of printing, referred to as resolution. Since the resolution of the device remains constant, if the screen ruling becomes finer, less levels of gray are possible. Conversely, more levels of gray are possible with coarser screen rulings. The number of dots is constant but divided differently. Once the image is in digital form it can be converted into a number of save formats.¹⁵²

Halftone Output

The Halftone Output option is intended for low resolution laser printers. When Halftone Output is selected a halftone screen suitable for the scan resolution indicated is generated *during the scan*. The creation of a halftone screen from gray scale information as it is being scanned is an involved mathematical process. It ultimately eliminates successful modification of the image after the scan, including scaling.¹⁵³

Halftone Output with EPSF

This combination gives the closest representation of the original when outputting on a laser printer. Advantages and disadvantages are:

Memory and time requirements usually associated with EPSF files are not as cumbersome when using Halftone output. Screened grayscale information requires less memory than pure grayscale information. The quality of the output is worth the memory this format uses.

Scaling must be done during scanning.¹⁵⁴

The scanning process tends to exaggerate high contrast originals and darken shadows.¹⁵⁵ Since no loss in tone occurs when importing this type of scan, tone compensation may be needed in MC View before scanning to compensate for darkened shadows.

The screen display is illegible, eliminating soft proofing. Placement is possible only by aligning edges of the imported file with edges of the picture box.

Proofing can be time intensive. To make changes and proof those changes, the image must be rescanned with the changes, saved, reimported, then printed.

Contone Output When Contone Output is selected a PostScript screen is generated *during printing*. Since the halftone screen is generated later, the scanned image is pure gray scale information. The altered and saved file is translated into a screened image only when the file is sent to the printer. Therefore screening decisions may be made at the point of printing. The image may be modified in MC View and Quark after the scan.¹⁵⁶

Contone Output
with TIFF
Uncompressed This combination is the best overall selection when the image files need extensive modification. The advantages and disadvantages are:
All of MC View and Quark's modification options are available after scanning and saving.^{157, 158}

The screen display is very good, allowing convenient soft proofing when modifying and placing the image.

A significant overall loss of tone occurs when a Contone file is imported into Quark. Tone compensation can be made in MC View or Quark.

The halftone screen is less noticeable than with EPSF output, when outputting on a laser printer.

Contone files require more memory than halftone files because pure gray scale information is saved. However Contone, TIFF Uncompressed files

require approximately one-half the memory requirements of Contone, EPSF files.

Contone Output with EPSF

This combination is the best selection if the output device is high resolution and fine screening rulings are desired.

Advantages and disadvantages are:

The file may be modified after the original scan, before the EPSF save. Files cannot be altered (except scaling) in MC View or Quark once saved as EPSF.^{159, 160}

An overall loss of tone occurs when a Contone file is imported. Compensate *before* saving as EPSF.

The screen display is illegible, eliminating soft proofing. Placement is possible only by aligning edges of the imported file with edges of the picture box.

Hard proofing can be time intensive. To make changes and proof those changes the image must be rescanned with the changes, saved, reimported, then printed.

The halftone screen is sharper in an EPSF file, making it highly visible in output from a low resolution printer. The EPSF format should be reserved for high resolution output where finer halftone screening is possible without sacrificing gray levels.

Contone files require much more memory and printing time than halftone files because pure gray scale information is saved. The EPSF format is also memory intensive. A Contone scan with the EPSF save format is the most memory intensive combination.

The TIFF Format

TIFF formats are scanner formats. These formats “tag” the image data, rather than leaving it in rasterized (bit-mapped) form, thus the name Tagged Image File Format (TIFF). There are several types of TIFF formats. The formats differ by the amount of data compression that takes place when saving. Data may be compressed for storage and transmission, but is then uncompressed for display and output. Images with gray scale information such as continuous tone and halftone images do not work well with data compression. Do *not* compress TIFF files.¹⁶¹

TIFF files display a low resolution representation of the image on screen. This screen format has smaller memory requirements and is saved with the Quark document after it is imported. The high resolution information is retained in the original file. This high resolution information is accessed from the original MC View file when the Quark document is printed.¹⁶²

The EPSF Format EPSF is the most memory intensive format. Information is stored as mathematical equations instead of in pixel form. This allows for greater precision and is considered an object-orientated format.¹⁶³ EPSF actually creates two formats. Both formats are contained in one file, displayed by one icon when viewed on the desktop. One format is seen on the screen and the other is seen as the printout when using higher resolution devices.

The first format is a PICT format, which is the “preview” picture seen in the picture box on the screen. This PICT format file is used by Quark for placement, scaling, and cropping. It is not a good representation of the output because it cannot display gray tones. Therefore the display is often predominately black with great loss of detail. It is also the information which low resolution non-PostScript printers (such as ImageWriters) use to print. The PICT format has smaller memory requirements and is saved with the Quark document after it is imported.¹⁶⁴

The second portion of the file is the PostScript format. This is the more accurate output printed by PostScript printers. The PostScript information is not saved with the Quark document, but is accessed from the original Illustrator file when the Quark document is printed.¹⁶⁵

Hints: What To Look For

Get Picture Display Missing

- If Get Text displays under the File menu instead of Get Picture then:
 - A text box is selected. Deselect the text box and activate a picture box.¹⁶⁶
- If Get Picture is shaded instead of solid then:
 - The wrong tool is selected. Activate the edit tool.¹⁶⁷

Desired Files Missing from Get Picture Display

- If the desired MC View file does not display in the Get Picture dialog box then:

The file may reside in a different folder or it may not be resident on the hard disk or floppy disk. Use the Find File function found under the Apple menu to locate it. If the file is not found then it must be installed on the hard disk or diskette.

The file may be saved in the wrong format. The Get Picture dialogue box will only display files that are in an accepted format for importation. (accepted but not necessarily suitable format) Find File will locate, but not display the save format. Close the Quark file and quit the application. Go to the location (using Find File) and look for the TIFF or EPSF icon with the appropriate file name in the window. The TIFF icon will not indicate whether it is uncompressed or a compressed version.



MC View TIFF icon



MC View EPSF icon

If the format is incorrect, a double click on the icon will open the file so that the save format can be changed (the application must be resident). However the “new” save can only convert information available from the “old” save. It may be necessary to rescan the image to regain essential image information that the “old” save did not save. Also, EPSF formats cannot be resaved as other formats. Refer to pages 83–89 for more specific examples of resaving to other formats.

Blank Picture Box on Screen

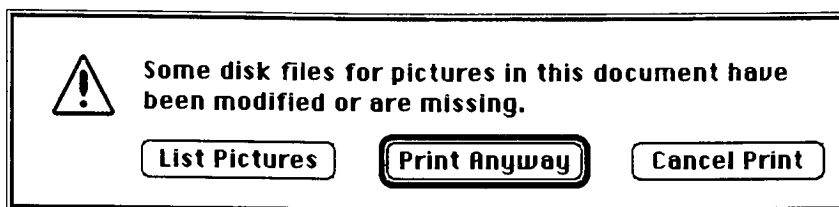
- If the X inside the picture box disappears but the picture box is blank then:

The picture has been imported but its visible portions are not centered in the picture box. Use \mathbb{H} –shift–M to automatically center the picture within the picture box.¹⁶⁸

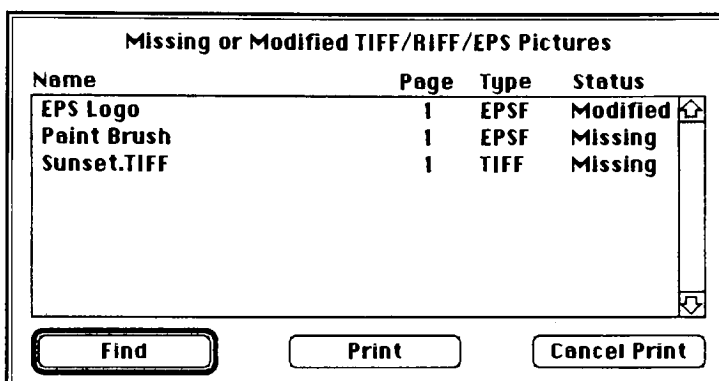
The edit tool may also be selected. The hand portion of the tool will be activated and the picture can be moved by “sliding” it with the hand.¹⁶⁹

Imported Files Modified or Missing

- If the following dialogue box appears when attempting to print then:



Go to List Pictures to determine if the problem is missing or modified pictures. Another dialogue box will appear listing the file name of the artwork, page location, format of the file, and the missing or modified status.¹⁷⁰



Modified Picture

- If the picture has been modified then:
When outputting in PostScript, the modified MC View file will be accessed for the printout. The message serves as a warning because the screen preview has not changed unless the picture has been reimported.¹⁷¹

If it is necessary to view the modifications on screen, then reimport the MC View file using Get Picture.

Missing Picture

- If the picture is missing then:
Select the missing file from the Missing or Modified dialogue box, then select Find. Quark will locate the file and reestablish the path so it may be accessed for output. It does not reimport the file so the screen preview remains the same.¹⁷²

The artwork can also be imported again under Get Picture.¹⁷³

The dialogue box is a warning that the output will be low resolution (provided a screen preview has appeared in the picture box). Quark is not able to find the original file of the artwork. Since Quark saves only the file name of the TIFF file or PostScript portion of the EPSF file, it must be able to locate and access the original file in order to print the TIFF file or PostScript. When it cannot find the original file it outputs in the screen format that was saved as part of the Quark document.¹⁷⁴

Files become missing because specific conditions must be observed to enable Quark to locate the original files:

If the Quark document is moved to another system, the original file must be moved to that system.¹⁷⁵

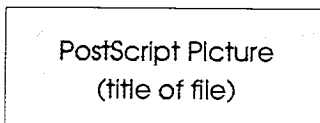
The name of the original file must remain the same as the name used when importing the artwork. Quark will search for the original Get Picture name and will not recognize a new name.¹⁷⁶

The sequence of the folders that Quark needs to access to locate the original file is called the "path." The path names and their sequence must remain the same as in the original Get Picture.¹⁷⁷

Quark will search in the Quark document folder if the original path has changed. If an original file needs to be moved, relocate the file in the Quark document folder so Quark can find it.¹⁷⁸

EPSF PostScript Message

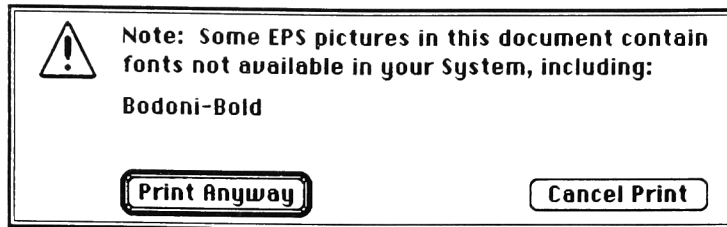
- If after importing a EPSF file the following message appears in a gray shaded picture box then:



The PICT format is too large for screen viewing and has not been imported. The PostScript will be accessed for output if a PostScript printer is used, but the PICT portion of the EPSF file is not available for screen viewing or bitmap output from low resolution printers.¹⁷⁹

**Font Substitution
Within the
Imported EPSF
File**

- If the following dialogue box appears when attempting to print then:



An imported EPSF file contains screen fonts that are not available on this system. Quark assumes that the printer font is also not available and displays the warning. This could occur if type is added to a scanned file in MC View.

The System file may be checked for the possible missing printer font or select Print Anyway. If the printer font is not available Quark will substitute Courier for the missing font.¹⁸⁰

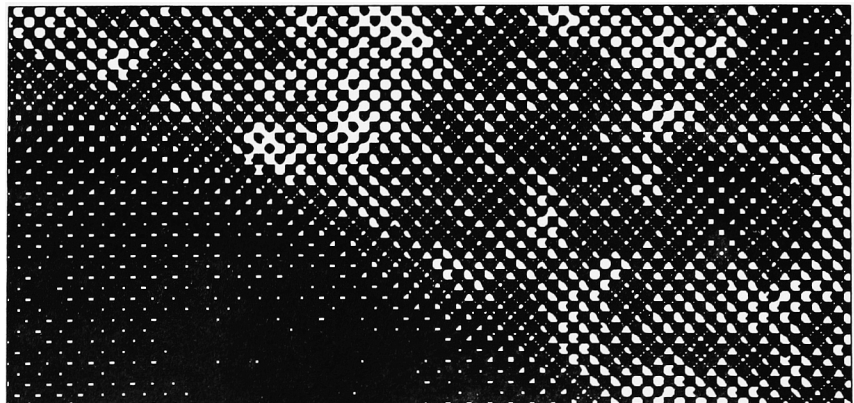
If the printer font is not resident the screen fonts and printer fonts must be installed into the system.

**Illegible Screen
Display,
Good Output**

- If an imported image appears nearly all black and illegible on the monitor but the output is good then:
It is saved in the EPSF format. The screen preview is very poor, but is normal. This format cannot be changed. Rescan if another format is desired.

**Magnified
Display and
Output**

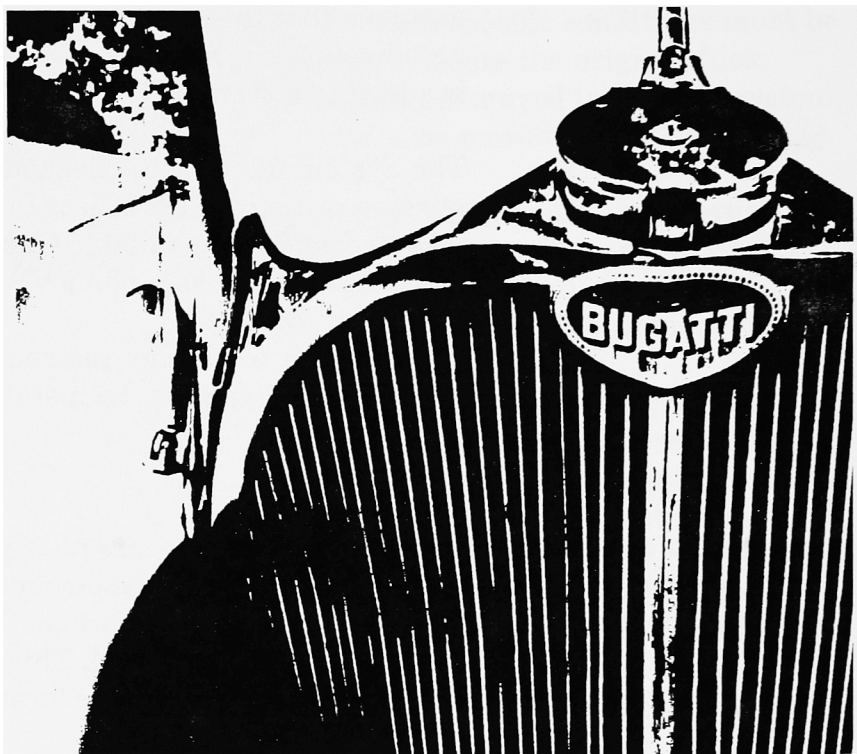
- If the imported image appears very dark with large pixels on the monitor and when printing then:



The Paint format was selected when saving a Halftone scan. Only a portion of the image was saved because the image has been greatly magnified. Rescan the image to regain all image information. Save in the EPSF format if it is a Halftone scan, or in TIFF Uncompressed or EPSF formats if it is a Contone scan.

Missing Midtones

- If an imported image is black and white with no midtones then:



Line art Output was selected as the scanning format or Contone Output was selected but the graymap control was set to eliminate midtones. The image must be rescanned as Halftone or Contone Output to regain gray scale information.

Jaggy Display and Output

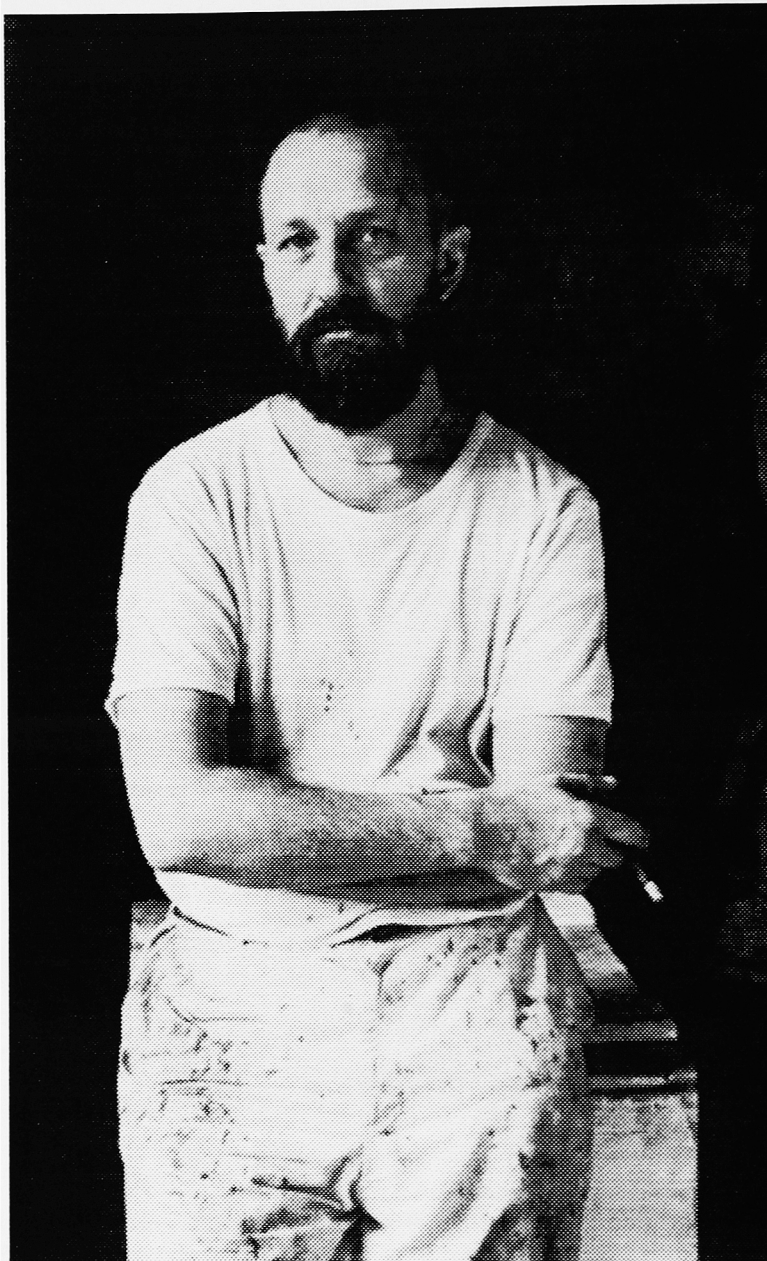
- If the imported image is jaggy but legible on the monitor and jaggy but much lighter in tone when printing then:



Halftone Output and TIFF Uncompressed were selected as the scanning and saving formats. Open the file and resave as the EPSF format under Save As. The tone loss occurs when the file is *imported* into Quark in the TIFF format (Halftone Output), but will not occur when importing the EPSF format (Halftone Output). Since the original TIFF file is not affected, tone compensation is not necessary.

**Loss of Overall
Tone**
(Contone scan,
TIFF format)

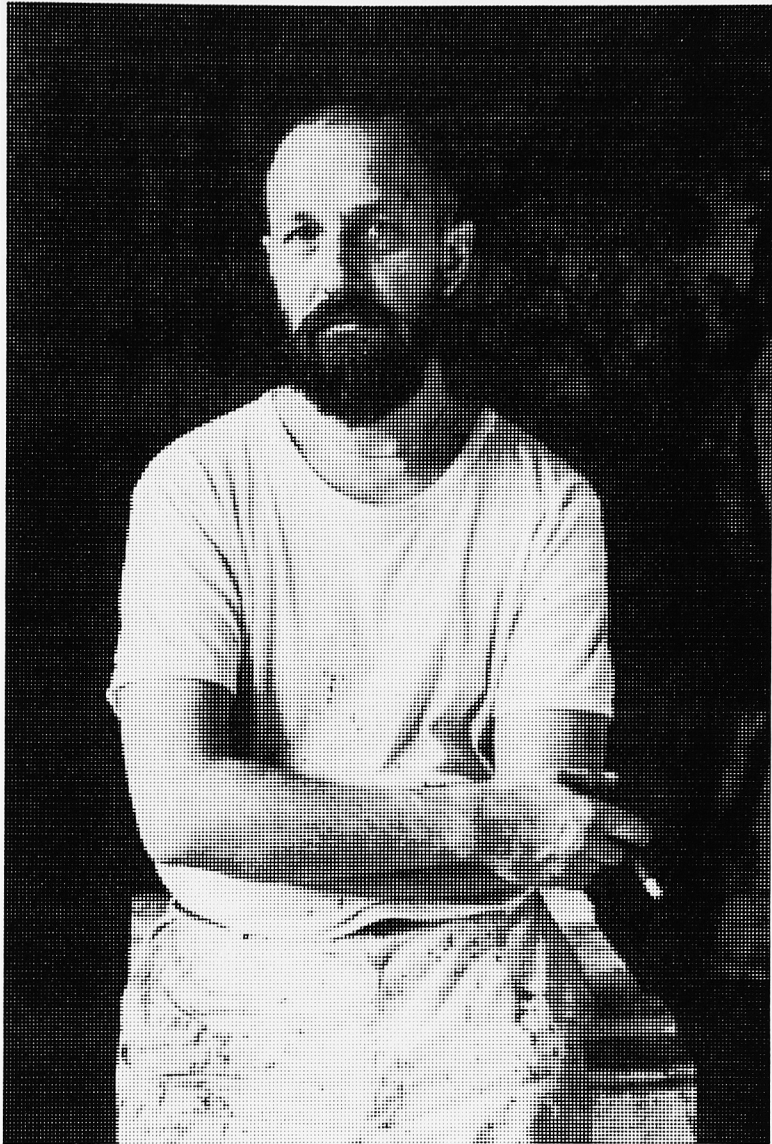
- If the output is too light after importing and if the file is a Contone, TIFF Uncompressed then:



The loss of tone occurs with the *import* of Contone files in both the TIFF and EPSF formats. The original files do not reflect this loss of tone. Adjust the tone curve in Quark if permanent changes to the image file are not necessary. The tone curve may be altered in MC View if the file is to be used in the future and permanent changes to the image are desired.

**Loss of Overall
Tone**
(Contone scan,
EPSF format)

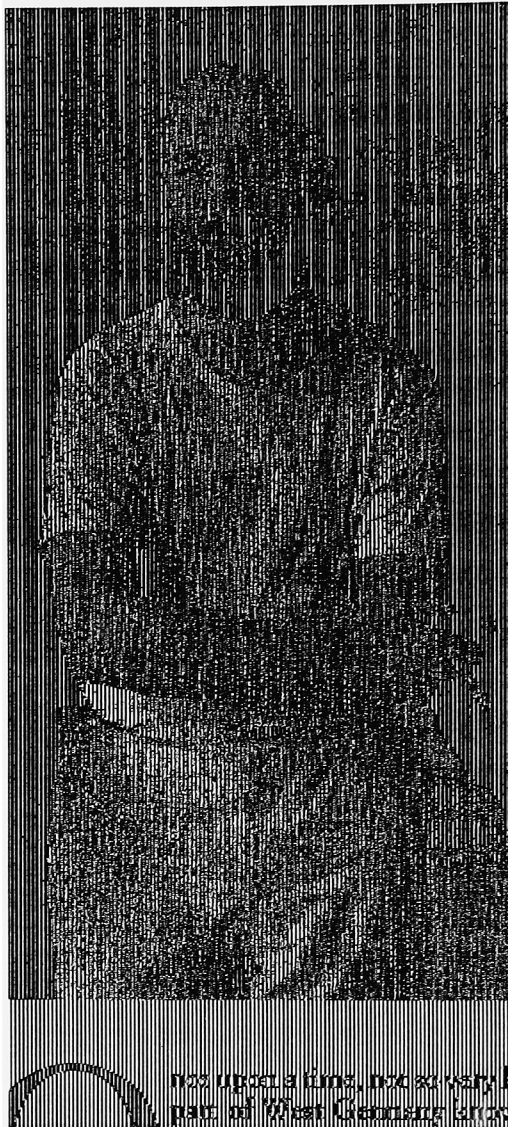
- If the output is too light after importing and if the file is a Contone, EPSF then:



The loss of tone occurs with the *import* of Contone files in both the TIFF and EPSF formats. The original files do not reflect this loss of tone. The tone can only be altered before the EPSF save. Rescan the image, compensate for tone, then save in the EPSF format. The image must be hard proofed because of poor monitor display. This can be a lengthy process. Not only are many steps required but EPSF files are the most memory intensive and take the longest to save, import, and print.

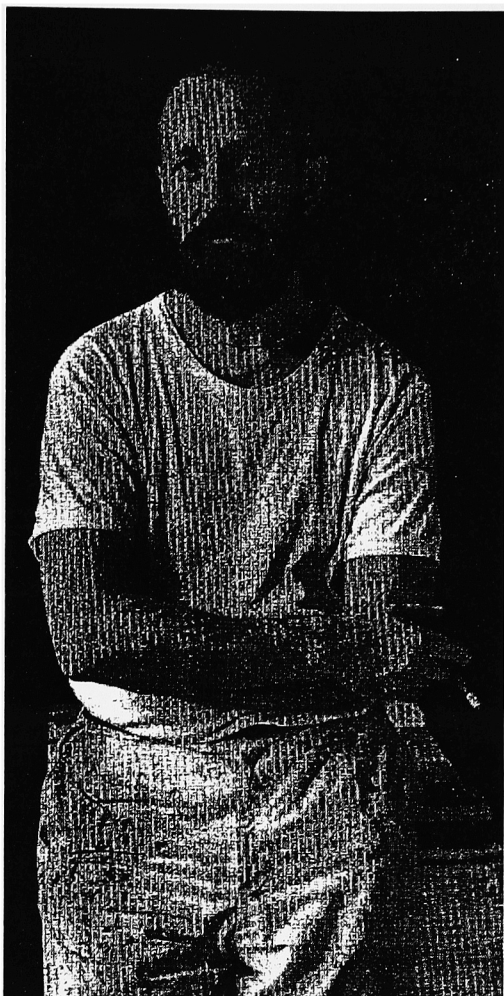
**Visible Scan
Lines on Display
and Output**

- If the image is dark with scan lines clearly visible then:



The original was a halftone, Line art Output was the scanning mode, with Contone to Line art option selected, and a TIFF save format selected. Rescan the image as a Contone or Halftone scan. Save in the EPSF format if it is a Halftone scan, or as EPSF format or TIFF Uncompressed if it is a Contone scan.

- If the image has a contrasty, posterized look with a waffle type texture then:

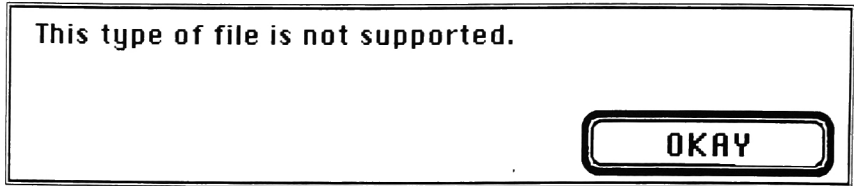


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part of West Germany know

The original was a halftone, Line art Output was the scanning mode, with Contone to Line art option selected, and the EPSF save format selected. Rescan the image as a Contone or Halftone scan. Save in the EPSF format if it is a Halftone scan, or in TIFF Uncompressed or EPSF format if it is a Contone scan.

MC View Won't Address File

- If the following message appears when attempting to open a MC View file from the desktop then:



The file is in the EPSF format, which MC View cannot open. The EPSF file may be viewed through a picture box after importing into Quark. Since no modifications can be made to this file, except scaling in Quark, it must be rescanned if it is not acceptable.

If opening from MC View the files will not be displayed for selection.

Moire Patterns

- If significant moire pattern appears then:



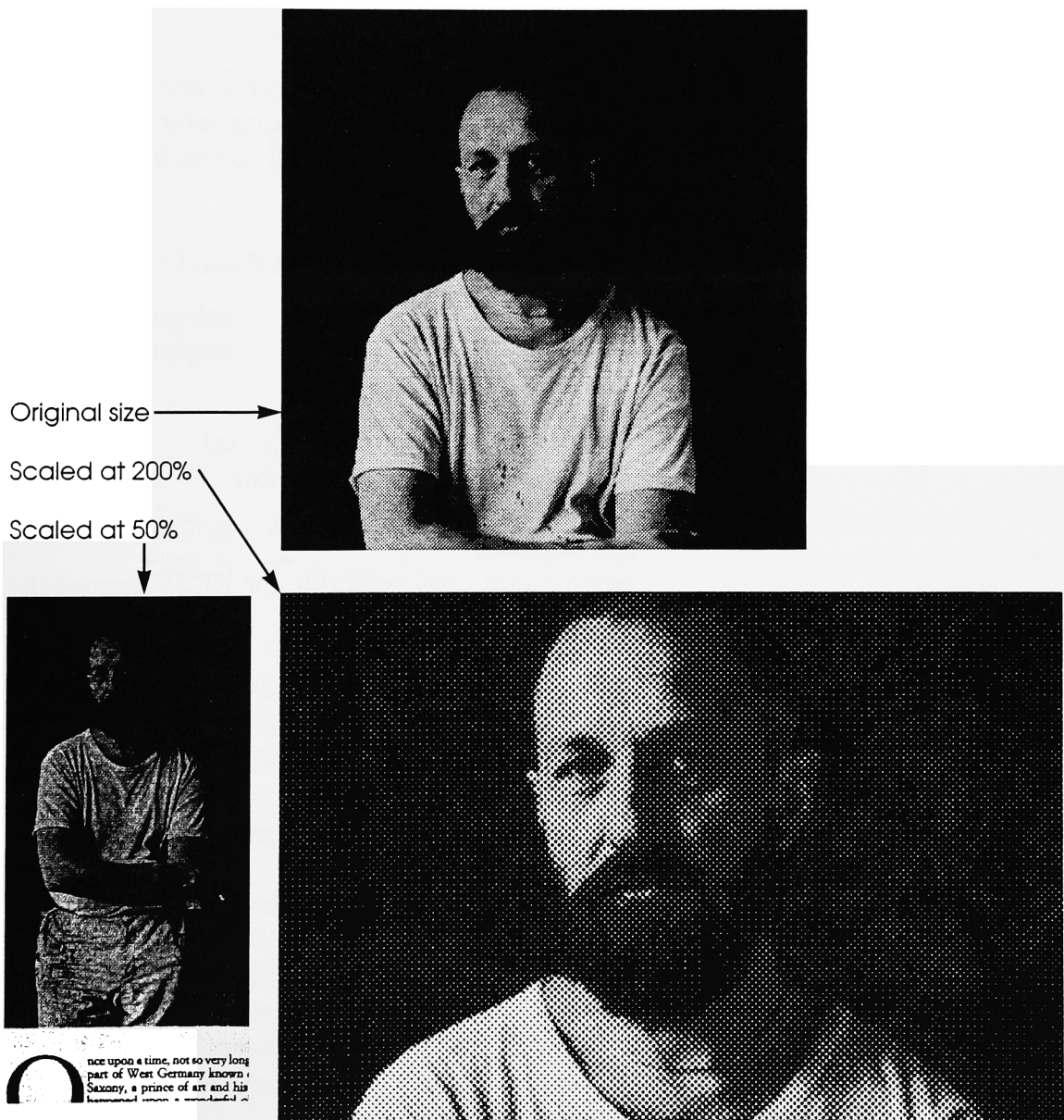
The Descreen option may not have been selected during the scan. The halftone screen of the original image is creating a moire pattern when the printer halftone screen is added. Rescan with Descreen selected.

Scaling Halftone Outputs

- If an imported Halftone image has been scaled then:
If the image is scaled larger, the screen is scaled larger also, making it appear coarser and more visible. This makes the image appear lighter in overall tone.

If the image is scaled smaller, the screen is scaled smaller also, making it so fine that detail fills in. The image appears darker in overall tone.

Halftone Output scans should be scaled at the time of the scan.¹⁸¹ Rescan the image after determining the proper scaling.



Considerations: Before and After Integration

Although many of the functions and tools in Quark and MC View are specialized and unique to the particular program, several may appear to overlap or handle similarly. The user is faced with the decision in which program to apply the overlapping functions. The reasons to work in one program over another vary. They depend upon whether both programs are available for use, whether the programs can address the save format of the file, the results desired, and differences in how the similar functions work. Overlapping functions and tools from Quark and MC View are discussed in the following pages.

Halftone Screening

When looking at MC View and Quark there appears to be a number of locations where screening selections may be made. Screening options are offered in the following locations:

MC View Plus:

Scanning dialogue box (Halftone Output only):

LaserWriter dot

Display dot

P400PS dot

Line 45

File menu (all scanning outputs)

Page Setup: Proof printer

Page Setup: EPSF file

QuarkXpress:

Style menu (not available for EPSF formats):

Normal

60-Line Line Screen/0°

30-Line Line Screen/45°

20-Line Dot Screen/45°

Other Screen—user defined screens

File menu:

Page set up—user defined lpi

The user wonders where the best place is to make the screening selection, which selection takes precedence, and how it will affect output. In actuality, the user has very few choices to make for this function. The selections actually available depend upon the scanning output selection and the save format. The key is to sorting out

which selections take precedence, even when various menus are active and appear to make options available.

Screening for Halftone Output

The Halftone Output scanning mode generates a halftone screen during the scan. Therefore a screen must be selected before the scan. When the scanning dialogue box appears the user must select the type of halftone screen to be used: LaserWriter dot, Display dot, P400PS dot, or Line 45. The scan resolution should match the resolution of the laser printer being used for output. The scanner automatically creates a halftone screen, with gray levels suitable for the resolution of the laser printer, while scanning.¹⁸²

All other screen options may be ignored in MC View and Quark. This file's screening information overrides all other screening options in MC View or Quark, when in the recommended save format, EPSF.

Screening for Contone Output

The Contone Output scanning mode saves pure grayscale information. A halftone screen is not generated until the file is sent to the printer. Therefore screen selections depend upon the application from which the file is being printed or the save format of the imported image.¹⁸³

Proof Printing Files in MC View

Screen selections must be made in MC View if proof printing from MC View. Set screen preferences by pulling down the File menu and selecting Proof Printer from Page Setup. All Contone files printed from the MC View application will display the selected proof printer screen.

Printing Files in Quark: Contone, TIFF Uncompressed

Screen information does not come over with imported TIFF files, only grayscale information. Quark sends the screening requirements to the printer, so screen selections must be made in Quark.

When Quark imports TIFF images, the Style menu will be active. Several preset screens are available, as well as Other screens, which allows the user to define the screen parameters.¹⁸⁴ The lpi of the Normal screen option is also user defined. It may be changed by selecting Page Setup under the File menu. Find the Halftone screen box

and type the number of lpi desired, then click on Okay. Only the lpi of the Normal screen will be changed.

Printing Files in
Quark:
Contone, EPSF

Since EPSF files cannot be altered once saved, the screen selection is made in MC View and that screen information is saved with the image file. Quark cannot alter the screen information that has been imported with the EPSF file. The screen is defined in MC View by selecting Page Setup under the File menu, then selecting EPSF file from the pull down menu. The image must be rescanned if the original screen selection needs to be changed.

Note: The user may change EPSF file screen selections, proof print, and wonder why the Proof printer selection takes precedence when printing EPSF images from MC View. The reason is the file may have been saved as EPSF, but has not been closed. TIFF is a scanner format and the TIFF information is not converted to EPSF until the file is closed. The proof print is a representation of the original scanner format—TIFF Uncompressed. EPSF files cannot be reopened in MC View once they have been closed because MC View does not address the EPSF format. However, once the EPSF file has been saved and closed, the EPSF screen information has been irrevocably saved with the file.

The following chart will aid users in making the screening selections in the appropriate location and at the proper time.

Type of Scanned File	Where to Select a Halftone Screen	
	MC View Plus	QuarkXpress
Halftone Output EPSF	Must select before scanning from Scanning Dialogue Box	Not available for EPSF
Contone Output TIFF Uncompressed	Select from Page Setup: Proof Printer (File menu) if printing from MC View	Select from Style Menu if printing from Quark
EPSF	Select from Page Setup: EPSF File if printing from Quark (the screen is saved and imported with with the file)	Not available for EPSF

Scaling Scaling must be done in MC View when scanning. It is important to know the final image size before scanning so the proper calculations can be made for the scan.¹⁸⁵
Halftone Output

Contone Output Scaling may be done in MC View when scanning or in Quark, regardless of the save format. The quality of scaling will be the same from both programs. In both programs scaling smaller will result in a loss of resolution. Scaling larger yields some distortion.¹⁸⁶ Excessive scaling should be avoided.

In MC View, time is saved by scaling during the scan, but the final image size must be known. If the final image size is not known then scaling in Quark is the only option. However scaling in Quark allows the results to be displayed on the screen immediately. This permits changes to be viewed quickly when playing with layout sizes.

If memory requirements are the primary consideration, especially for the memory intensive EPSF format, the choice of programs would depend upon the size of the final image. When scaling larger in MC View more memory is used and the better choice may be to scale in Quark. The opposite would be true of scaling smaller.

Quark also allows disproportionate scaling, which is not offered in MC View.

Duplicating In Quark, the entire picture box and its contents are duplicated using the Items menu—Duplicate function. Multiple duplication is possible with the Step and Repeat function. This function controls quantity and placement of the duplication in equal increments horizontally and/or vertically. Once duplicated, the boxes are separate entities and can be arranged independently.

Duplicating images in MC View is not always feasible. It is actually a cutting and pasting operation, and should be used when individual elements need to be duplicated. The duplicated elements and their placement become part of the image file. If the entire image must be duplicated in MC View there must be enough white space to hold the copied image, since what is underneath will be replaced.

The quality of the duplications will be the same from both programs.

Text and Rules In general the same advantages and limitations apply to text and rule tools. Quark is the more versatile program to work in when using these tools. MC View's range of options for these tools are limited.

In MC View text and rules become part of the image file and cannot be separated from the image. When the text and rules are active they may be moved and placed within the image file. However, once they are no longer active, they become part of the image and the information underneath is lost. So cutting and pasting to move text or rules to another location will leave a blank hole at the original location.

In Quark, text and rules are separate entities and not part of the image. Text is contained within text boxes, and text boxes and rules may be moved for placement at any time without disturbing the image underneath. Although the text boxes and rules are not part of the image, they may be locked in place so that the picture box and its contents can be treated as a whole unit.

Contrast or Tone Compensation Controls When looking at MC View and Quark there appears to be a number of locations where contrast or tone modifications may be made. However the availability is dependent upon the scan output and save formats used.

Halftone Output, EPSF Tone compensation is only available before scanning in MC View in the scanning dialogue box. The user selects tone curves by choosing options such as Light original, Dark original, Brighten shadows, etc..¹⁸⁷ Other contrast options are not active after scanning in MC View or after importing in Quark.¹⁸⁸

Contone Output, TIFF Uncompressed The important consideration when importing a Contone file is that an overall loss of tone occurs with the import. Contrast control is offered in MC View under the View menu—Graymap control option.¹⁸⁹ Users can compensate for the tone loss while still in the MC View program, but will not see the results until it is imported into Quark.

Although the output is similar from both functions, it is easier to alter the tone curve in Quark. The user can view the tone loss, which occurred with the import, on the monitor in Quark and can view adjustments immediately. Quark offers extensive modifications options under the Style menu—Contrast option.¹⁹⁰

Contone
Output, EPSF

Contrast modifications must be made in MC View before the file is saved and then closed in the EPSF format, because files cannot be altered once converted to the EPSF format.¹⁹¹ Before the file is closed it is still in the scanning format—TIFF Uncompressed. The conversion from TIFF to EPSF takes place when the file is closed. MC View will not address the file once it is closed.

Contrast control is offered in MC View under the View menu—Graymap control option.¹⁹² The same loss of tone that occurs with the Contone TIFF Uncompressed import will occur with the EPSF format. Users can compensate for the tone loss while still in the MC View program, but will not see the results until it is output from Quark. Quark will not activate its Style menu (where the contrast controls are located) to EPSF files.¹⁹³ The image must be rescanned, modified, saved and closed, imported, and output until the desired results are achieved.

Importing Scanned Images from MC View Plus: Halftone Charts, Graphs, and Diagrams

Save Format for Integration

Considerations When scanning and importing charts, graphs, or diagrams the original images will be in one of three forms—line art (black and white tones only), continuous tones (gray tones), or halftones (simulated gray tones). It is the nature of charts, graphs, and diagrams to contain a quantity of line work. Therefore these types of images import and reproduce better if treated as line art when scanning.

It may be desirable to retain the shaded areas in charts, graphs, and diagrams that are found in continuous tone and halftone originals. However, in order to simulate gray tones, the printing process requires screening of the image. When these types of images are screened the quality of the line work in the file is very poor. Although the gray tones in continuous tone and halftone originals will be converted to white or black during a line art scan, Line art Output remains the best scanning choice. The user may add a variety of patterns to selected areas of the image to simulate gray tones *after* the scan in MC View by using modifying functions and tools.

More than one save format is available for scanned line art. The format selected depends upon several factors. They are:

Modifications:

Are MC View modification options necessary?

Are Quark modification options necessary?

Screen Viewing:

Is a good screen representation necessary?

Output resolution:

Low resolution—Laser printer (under 1000 dpi)

High resolution output—Typesetter quality
(over 1000 dpi)

The proper save sequence in MC View Plus for line art involves choices from three separate options. The three options and the selected choices are:

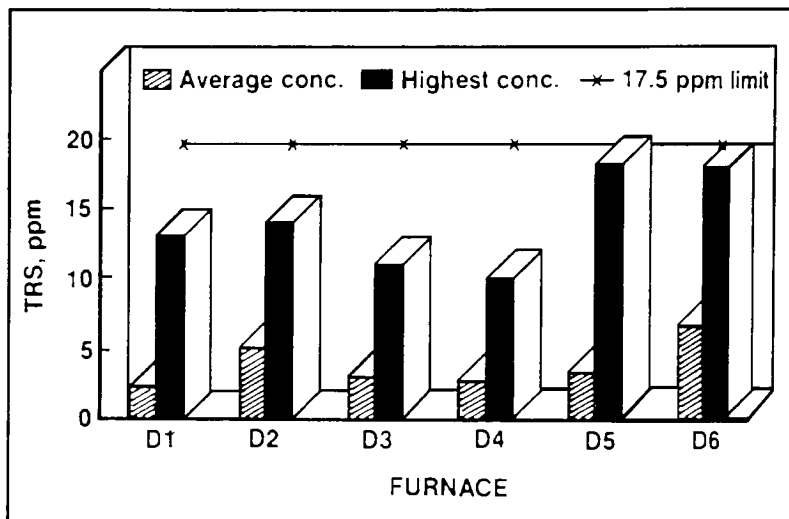
Scan selection option: **Line art Output—Manual**

End application option: **QuarkXpress**

Save format option:

TIFF Uncompressed—if Quark's Style menu options (shade, color, and screening) are required *or* if output is laser printer resolution.

EPSF—if Quark's Style menu options are not required, *and* output is high resolution.

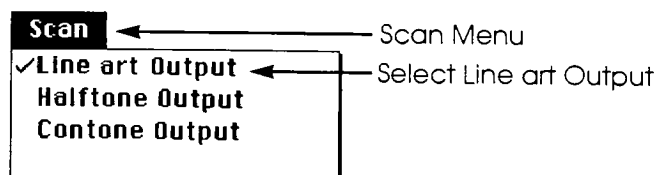


Line art Output,
Tiff Uncompressed,
Maximum Threshold

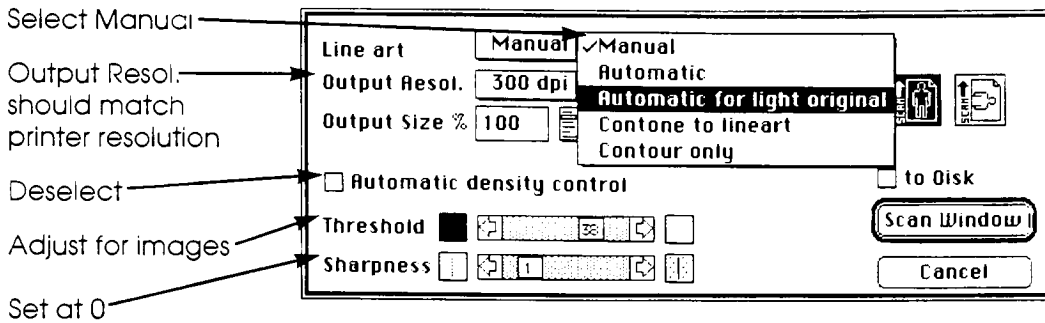
How to Save in MC View Plus

Line art Output is selected before the initial scan in MC View Plus under the Scan menu.¹⁹⁴ A ✓ will be placed next to the selected output. It is important that the file be scanned as line art since Quark treats TIFF line art differently than other TIFF files.¹⁹⁵

Scan Selection



A pull down menu is available in the scanning dialogue box for Line Art.¹⁹⁶

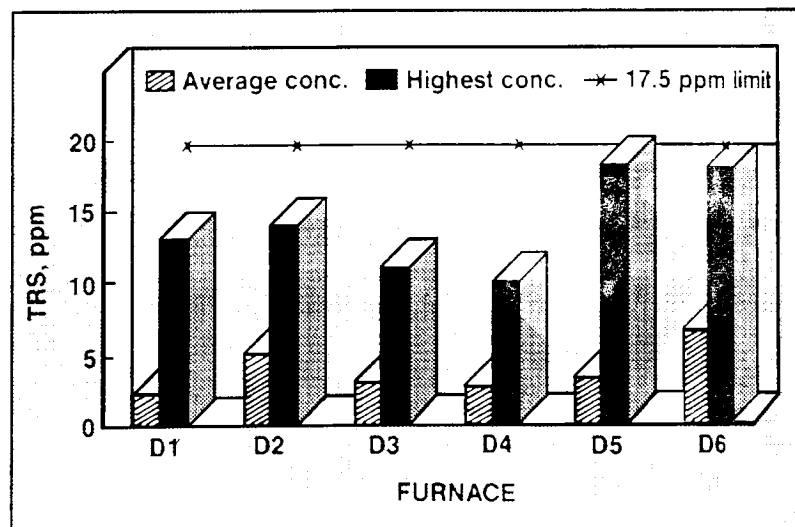


Select Manual from the pull down menu. The output resolution should match the resolution of the printer.¹⁹⁷

Deselect Auto Density Control when in the scanning dialogue box. This allows manual selection of the Threshold setting. The Threshold setting determines the density at which dots become black or white. By adjusting the Threshold, undesirable “background” matter can be dropped out of the scan.¹⁹⁸

Experimentation will determine the optimum Threshold setting for particular images. Continuous tone or halftone originals will require higher settings, such as 40–50, to convert all the gray tones to white.

Shaded areas can be added by using MC View Pattern menu. Pull down the menu, select Transparent, then select the Fill pattern desired. Go to the tool box and click on the paint bucket. Place the paint bucket tool over the area in the image to be filled. Each enclosed area must be filled separately.

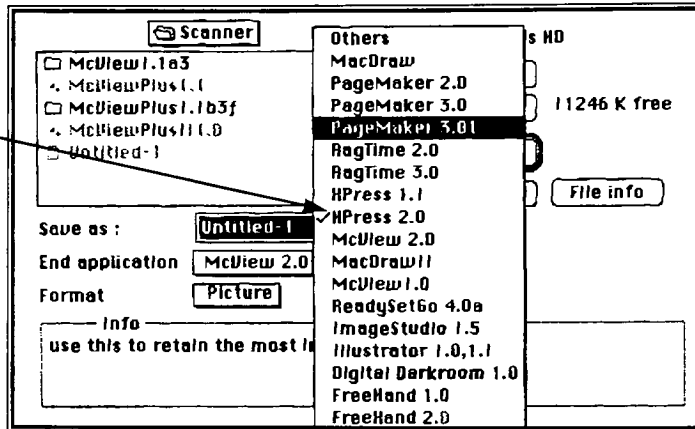


Line art Output,
Tiff Uncompressed,
Maximum Threshold,
Pixel edited,
Patterns added
with Paint bucket

Note: Pixel editing is usually required for the line work contained within charts, graphs, and diagrams.

End Application After the scan select Save as under the File menu. This displays End application options from which the target program, XPress (Quark), is selected from the submenu.¹⁹⁹

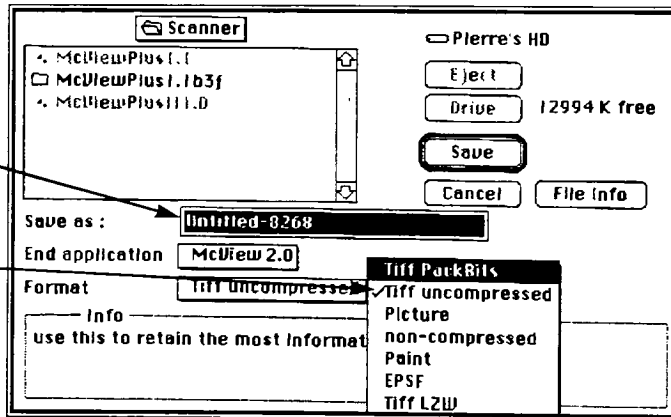
Select XPress (Others and MC View will work also. They display the same format options for Line art Output)



Save Formats By selecting Quark as the end application, only the formats that Quark will accept will be displayed in the Format submenu.²⁰⁰ If Others is selected the submenu will display all of MC View Plus's saving formats.

Give the file a descriptive name to help identify it

Select Tiff Uncompressed or EPSF



TIFF Uncompressed

Select TIFF Uncompressed if the output is a low resolution laser printer or Quark's Style menu options are required (shade, color, and screening). Modifications may be made to this file before and *after* the save. This may be important for this type of image that requires so many modifications (especially if shaded areas are being added).

EPSF Format Select EPSF if the output is a high resolution device and Quark's Style manual options are not necessary. There is no noticeable difference between Tiff Uncompressed and EPSF when printing from a laser printer. Since EPSF is memory intensive, select this format only if the output is high resolution. Once a file is saved in the EPSF format no modifications may be made to it.²⁰¹ Therefore changes in MC View are restricted to *before* the save and Quark modification options (except for scaling) are eliminated.

Note: If the format is selected before the end application, and it is not appropriate to the end application, then the format will jump to another selection. By selecting the end application *before* selecting the format the problem of the format jumping around will be eliminated. Unnoticed format changes may adversely affect the Quark import.

How To Import Line Art into QuarkXpress

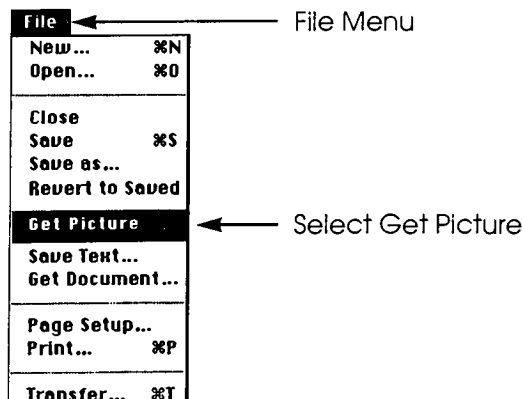
- Select the editing tool from the tool palette and click. The selected tool will become a negative image.²⁰²



- Create a new picture box or activate a current picture box with a single click of the mouse.²⁰³



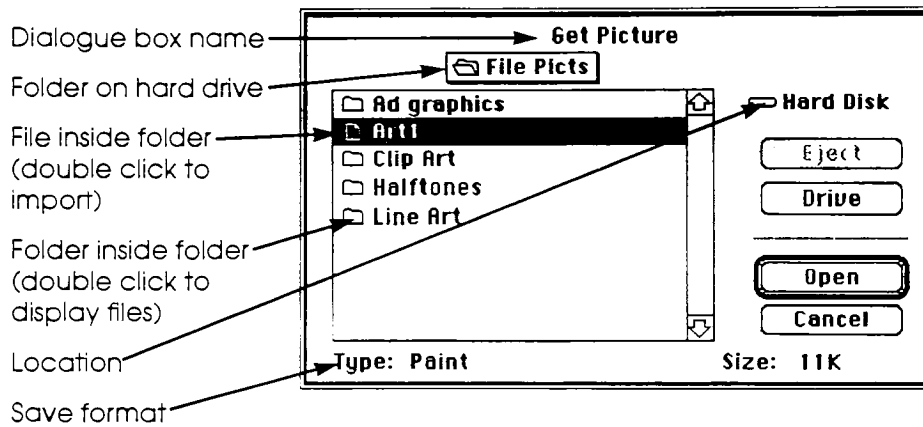
- Select Get Picture under the File Menu. Get Picture can only be selected if a picture box and the editing tool are activated.²⁰⁴



- The Get Picture dialog box will appear.
If you are in a file, it lists the files and folders that can be imported into Quark from the location (hard disk or floppy disk) where you opened this file. If you are in a folder at either location, it lists the files in that folder.²⁰⁵

A double click on a folder name will open that folder to show you its folders or file names. Folders can be inside folders so double click until the desired file is found.

To change location, one click on the “drive” button transfers you between the diskette and hard disk.



- Select the desired file for artwork importation.
The file's save format is displayed in the dialogue box for easy verification.

A double click on a file name will import the art from that file into the activated picture box.

A single click on a file name, then a single click on the “open” button will also import the file.

- The picture box from the Quark document should now displayed the imported art in the picture box. The imported picture replaces any picture that was previously placed in the box.

Hints: What Has Happened

The Scanning Process The scanner digitizes the image into a series of pixels by converting light energy to electrical signals. A light is passed over the image and the reflection of the light from the image is passed through a photoreceptor. The photoreceptor converts the light into an electric signal. The intensity of the electric (analog) signal determines the level of grayness of the pixel (digital information) created.²⁰⁶ Once the image information is in digital form it can be converted into a number of save formats.

Line art Output By selecting Line art Output, MC View takes a level of gray and converts all darker readings to black and all lighter readings to white. The result is each pixel is either black or white.²⁰⁷ The gray level can be set automatically or manually (threshold option) for more control.²⁰⁸

The TIFF Format TIFF formats are scanner formats. These formats “tag” the image data, rather than leaving it in rasterized (bit-mapped) form, thus the name Tagged Image File Format (TIFF). There are several types of TIFF formats. The formats differ by the amount of data compression that takes place when saving. Data may be compressed for storage and transmission, but is then uncompressed for display and output. Line art works well with data compression.²⁰⁹

If a TIFF format is selected for importation into Quark it must be scanned as line art.²¹⁰ Because line art does not usually require a great deal of memory, TIFF Uncompressed has been selected as the format of choice. However, Line art in compressed TIFF formats import with no noticeable difference in output. The TIFF formats offered by MC View for importing into Quark are listed below in ascending order of memory requirements:

TIFF CCITT—Standard format with high data compression

TIFF Packbits—Standard format with single data compression

TIFF Uncompressed—Standard format without data compression²¹¹

The EPSF Import EPSF is the most memory intensive format. Information is stored as mathematical equations instead of in pixel form, then converted into pixel form at the printer. This allows for greater precision and is considered an object orientated format. However files cannot be altered once they are saved in the EPSF format.²¹²

EPSF actually creates two formats. Both formats are contained in one file, displayed by one icon on the desktop. One format is seen on the screen and the other is seen as the printout when using higher resolution devices.

The first format is a PICT format, which is the “preview” picture seen in the picture box on the screen. This PICT format file is used by Quark for placement, scaling, and cropping. It is not an accurate representation of the output. It is usually heavier with much detail filling in. It is also the information which low resolution non-PostScript printers (such as ImageWriters) use to print. The PICT format has smaller memory requirements and is saved with the Quark document after it is imported.²¹³

The second portion of the file is the PostScript format. This is the more accurate output printed by PostScript printers. The PostScript information is not saved with the Quark document, but is accessed from the original MC View file when the Quark document is printed.²¹⁴

Other Formats Quark is also capable of importing Picture (PICT) and Paint formats. A disadvantage is the Quark Style menu is not available for these formats (and EPSF), eliminating several useful options from Quark.²¹⁵ Another disadvantage is the Paint format cannot be scaled, has size limitations, and becomes truncated.²¹⁶

Hints: What To Look For

- Get Picture Display Missing**
- If Get Text displays under the File menu instead of Get Picture then:
A text box is selected. Deselect the text box and activate a picture box.²¹⁷
 - If Get Picture is shaded instead of solid then:
The wrong tool is selected. Activate the edit tool.²¹⁸

Desired Files Missing from Get Picture Display

- If the desired MC View file does not display in the Get Picture dialogue box then:

The file may reside in a different folder or it may not be resident on the hard disk or floppy disk. Use the Find File function found under the Apple menu to locate it. If the file is not found then it must be installed on the hard disk or diskette.

The file may be saved in the wrong format. The Get Picture dialogue box will only display files that are in an accepted format for importation. (accepted but not necessarily suitable format) Find File will locate the file, but not display the save format. Close the Quark file and quit the application. Go to the location (using Find File) and look for the TIFF or EPSF icon with the appropriate file name in the window on the desktop. The TIFF icon will not indicate whether it is uncompressed or a compressed version.



MC View TIFF icon



MC View EPSF icon

If the format is incorrect, a double click on the icon will open the file so that the save format can be changed (the application must be resident). However the “new” save can only convert information available from the “old” save and EPSF cannot be converted at all. It may be necessary to rescan the image to regain essential image information that the “old” save did not save. Refer to pages 110–112 for specific examples of resaving to other formats.

Blank Picture Box on Screen

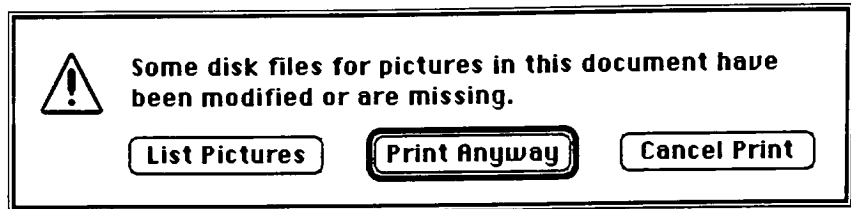
- If the X inside the picture box disappears but the picture box is blank then:

The picture has been imported but its visible portions are not centered in the picture box. Use **⌘-shift-M** to automatically center the picture within the picture box.²¹⁹

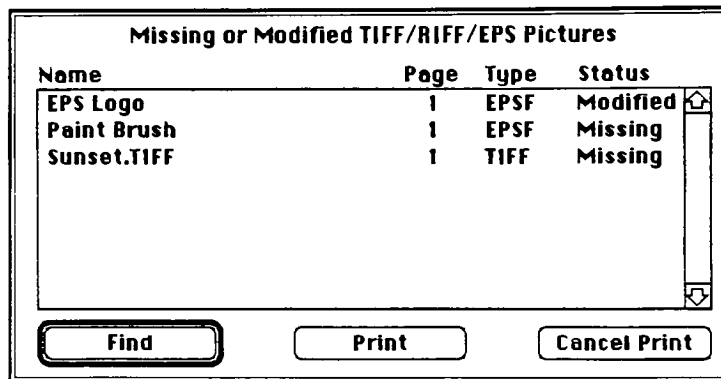
The edit tool may also be selected. The hand portion of the tool will be activated and the picture can be moved by “sliding” it with the hand.²²⁰

Imported Files Modified or Missing

- If the following dialogue box appears when attempting to print then:



Go to List Pictures to determine if the problem is missing or modified pictures. Another dialogue box will appear listing the file name of the artwork, page location, format of the file, and the missing or modified status.²²¹



Modified Picture

- If the file has been modified then:
When outputting in PostScript, the modified MC View file will be accessed for the printout. The message serves as a warning because the screen preview has not changed unless the picture has been reimported.²²²

If it is necessary to view the modifications on screen, then reimport the MC View file using Get Picture.

- If the picture is missing then:
Select the missing file from the Missing or Modified dialogue box, then select Find. Quark will locate the file and reestablish the path so it may be accessed for output. It does not reimport the file so the screen preview remains the same.²²³

The artwork can also be imported again under Get Picture.²²⁴

The dialogue box is a warning that the output will be low resolution (provided a screen preview has appeared in the picture box). Quark is not able to find the original file of the artwork. Since Quark saves only the file name of the TIFF file or PostScript portion of the EPSF file, it must be able to locate and access the original file in order to print the TIFF file or PostScript. When it cannot find the original file it outputs in the screen format that was saved as part of the Quark document.²²⁵

Files become missing because specific conditions must be observed to enable Quark to locate the original files:

If the Quark document is moved to another system, the original file must be moved to that system.²²⁶

The name of the original file must remain the same as the name used when importing the artwork. Quark will search for the original Get Picture name and will not recognize a new name.²²⁷

The sequence of the folders that Quark needs to access to locate the original file is called the "path." The path names and their sequence must remain the same as in the original Get Picture.²²⁸

Quark will search in the Quark document folder if the original path has changed. If an original file needs to be moved, relocate the file in the Quark document folder so Quark can find it.²²⁹

EPSF PostScript Message

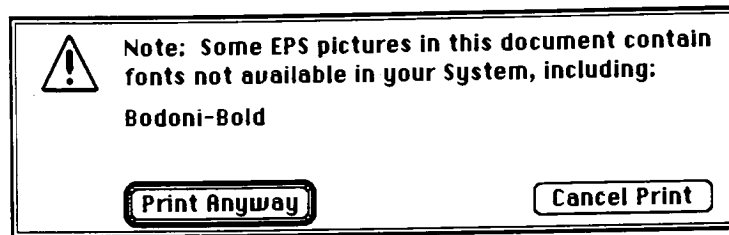
- If after importing an EPSF file the following message appears in a gray shaded picture box then:

PostScript Picture
(title of file)

The PICT format is too large for screen viewing and has not been imported. The PostScript portion will be accessed for output if a PostScript printer is used, but the PICT portion of the EPSF file is not available for screen viewing or bitmap output from low resolution printers.²³⁰

**Font Substitution
within the
Imported EPSF
File**

- If the following dialogue box appears when attempting to print then:



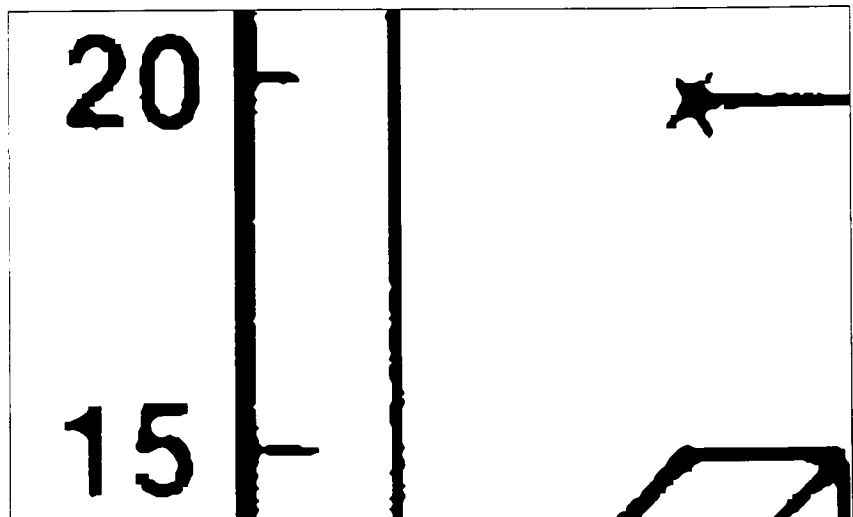
An imported EPSF file contains screen fonts that are not available on this system. Quark assumes that the printer font is also not available and displays the warning. This may occur if text is added to a scanned file in MC View.

The System file may be checked for the possible missing printer font or select Print Anyway. If the printer font is not available Quark will substitute Courier for the missing font.²³¹

If the printer font is not resident the screen fonts and printer fonts must be installed into the system.

**Magnified
Image**

- If the imported image appears cropped and greatly magnified on the monitor and when printing then:

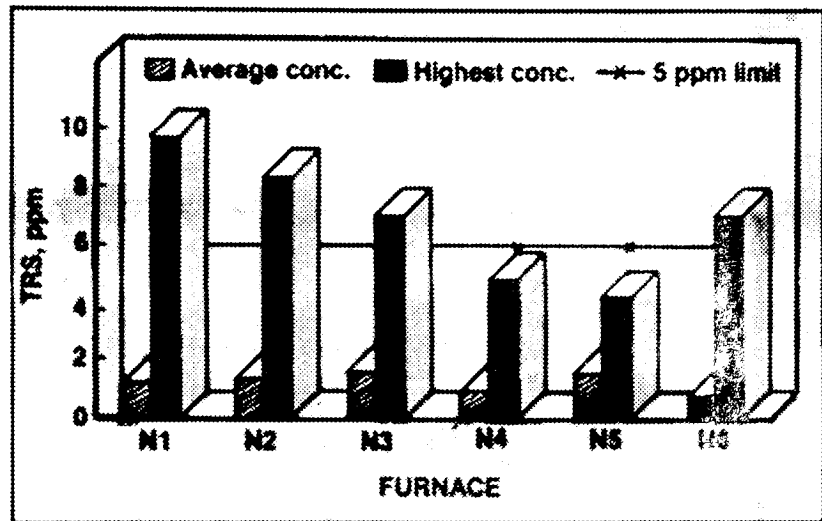


The Paint format was selected when saved. Only a portion of the image was saved because of size

limitations. If the file is resaved in a TIFF or EPSF format without a new scan only a portion of the original image is available for the “new” save, although the original size will return. The image must be rescanned to regain all information. Save the new scan as EPSF or TIFF Uncompressed.

Soft and Diffused Image

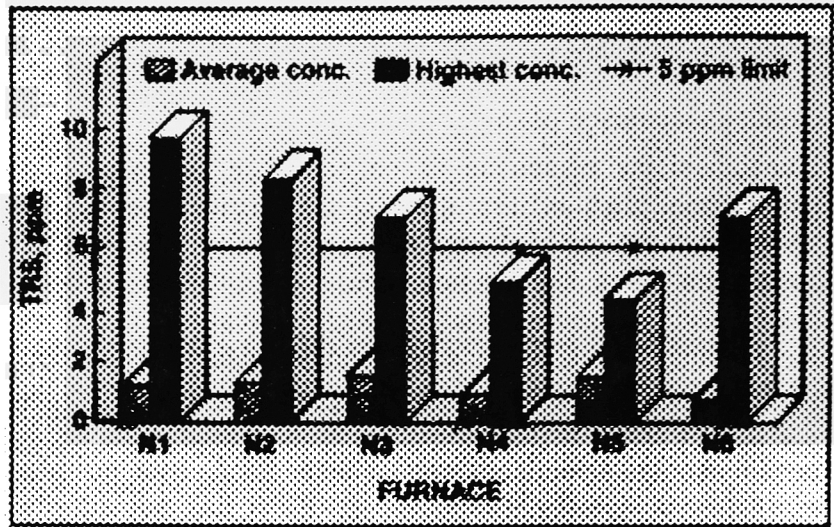
- If the imported image contains gray tones and appears slightly soft and diffused on the monitor, but output is screened and much lighter then:



Contone Output was selected as the scanning format. The Contone file cannot be used as line art. The image must be rescanned, selecting Line art Output, then saved in the TIFF Uncompressed or EPSF format.

Although the appearance of the image on the monitor is close to the original, the output is very different. The image on the monitor is pure gray scale information and is not screened. When the file is sent to the printer a halftone screen is added to the image. This results in poor quality line work. When the Contone file is imported into Quark a significant loss of tone occurs. Although the monitor and the proof print from MC View yield a somewhat acceptable image (if the user is determined to reproduce the gray tones of the original) the output after importing is poor.

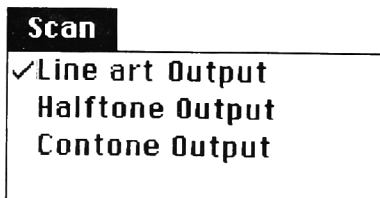
- If the imported image appears coarsely screened on the monitor when printing then:



Halftone Output was selected as the scanning format. The Halftone file cannot be used as line art. The image must be rescanned, selecting Line art Output, then saved in the TIFF Uncompressed or EPSF format.

The Halftone scan is designed for laser printers and automatically generates a halftone screen, suitable for laser printer resolution, at the time of the scan.²³² This screen is too coarse for the line work found in charts, graphs, and diagrams and is readily visible on the monitor and at output.

- If the text in imported line work appears rough for monitor viewing when a different computer is used then:



The computer is reading monitor information differently. The System file is a different version or a different video card is used.²³³

The output matches the monitor if the original file is missing or cannot be accessed. Use Find in the Missing or Modified dialogue box to reestablish the path or reimport the file.²³⁴

If the original file can be accessed, the output matches the original file even though the monitor display is poor.

Considerations: Before and After Integration

Although many of the functions and tools in Quark and MC View are specialized and unique to the particular program, several may appear to overlap or handle similarly. The user is faced with the decision in which program to apply the overlapping functions. The reasons to work in one program over another vary. They depend upon whether both programs are available to use, whether the programs can address the save format of the file, the results desired, and differences in how the similar functions work. Overlapping functions and tools from Quark and MC View are discussed in the following pages.

Scaling Scaling may be done in MC View when scanning or in Quark, regardless of the save format. The quality of scaling will be the same from both programs.

In MC View, time is saved by scaling during the scan, but the final image size must be known. If the final image size is not known then scaling in Quark is the only option. However the results of scaling in Quark are displayed on the screen and allow for quick changes when playing with layout sizes.

If memory requirements are the primary consideration, especially for the memory intensive EPSF format, the choice of programs would depend upon the size of the final image. When scaling larger in MC View more memory is used and the better choice may be to scale in Quark. The opposite would be true of scaling smaller.

Quark also allows disproportionate scaling, which is not offered in MC View.

Duplicating In Quark, the entire picture box and its contents are duplicated using the Items menu—Duplicate function. Multiple duplication is possible with the Step and Repeat function. This function controls quantity and placement of the duplication in equal increments horizontally and/or vertically. Once duplicated, the boxes are separate entities and can be arranged independently.

Duplicating entire images in MC View is not always feasible. It is actually a cutting and pasting operation, and should be used when individual elements need to be duplicated. The duplicated elements and their placement become part of the image file. If the entire image must be duplicated in MC View there must be enough white space to hold the copied image, since what is underneath will be replaced by the image on top.

The quality of the duplications will be the same from both programs.

Text and Rules In general the same advantages and limitations apply to text and rule tools. Quark is the more versatile program to work in when using these tools. MC View's range of options for these tools are limited.

In MC View text and rules become part of the image file and cannot be separated from the image. When the text and rules are active they may be moved and placed within the image file. However, once they are no longer active, they become part of the image and the information underneath is lost. So cutting and pasting to move text or rules to another location will leave a blank hole at the original location.

In Quark, text and rules are separate entities and not part of the image. Text is contained within text boxes, and text boxes and rules may be moved for placement at any time without disturbing the image underneath. Although the text boxes and rules are not part of the image they may be locked in place so that the picture box and its contents can be treated as a whole unit.

Preparing for Output

Location of Imported Files

Text from MacWrite When the Quark file is saved, text that has been imported becomes part of the Quark document. However the fonts contained in the imported text must reside in the system or in the printer, or the output will be bitmapped. The output of the Quark document is not dependent upon the MacWrite file being resident on the diskette or hard disk.

Artwork from Illustrator EPSF files, including Illustrator EPSF files, are comprised of a PICT format for screen previewing and a PostScript format for output. Saved with the Quark file is the PICT portion of the EPSF Illustrator file, the EPSF file name, and the names of the path to the original EPSF file. The PostScript portion of the EPSF file remains in its original location.²³⁵

The name of the EPSF file, the names of the path, and the path sequence, must all remain unchanged so that Quark can locate and access the PostScript portion of the file for output. If any of the above are changed the PICT portion of the file will be output instead of the PostScript.²³⁶

Scanned Images from MC View The graphics discussed in this module have been saved in the TIFF Uncompressed or EPSF save formats. When these types of files are imported into Quark the screen preview portion of the save format is imported so that the image may be viewed and placed on the monitor. Saved with the Quark file is the screen preview portion of the graphic file, the graphic's file name, and the names of the path to the original graphic file. The TIFF Uncompressed file, or the PostScript portion of an EPSF file remains in its original location.²³⁷

Imported images in Quark The name of the graphic file, the names of the path, and the path sequence, must all remain unchanged so that Quark can locate and access the TIFF Uncompressed file or PostScript portion of an EPSF file for output. If any of the above are changed the screen preview portion of the file will be output instead of the information from the original. The screen preview is lower resolution and usually unacceptable.²³⁸

Storing and Transporting Files

Storage capacity It is useful to know how much memory an image, file, or folder requires for storage and/or transport. Scanned images, in particular, can occupy more memory than is available for storage, manipulation or transport, depending upon the available equipment. There are several ways to get memory information depending on which program you are in and if you want file information or image information.

Hard Disk When on the desktop, to view how much memory on the hard disk is used and how much is available double click on the hard disk icon. The memory information will be displayed in K units (1024 bytes) at the top of the window.

File When on the desktop, to view how much memory a file occupies click once on the file so it is highlighted. Pull down the File menu and select Get Info. The number of bytes the file occupies will be displayed.

Images in MC View When an image file is open in MC View, to see how much memory an image occupies pull down the File menu and select Get Info. All picture information will be displayed.

Importing Images When in Quark, to view how much memory an imported image will occupy pull down the File menu and select Get Picture. Click once on the desired image file. In the lower right corner of the dialogue box the K units (1024 bytes) of the file will display.

Transporting Files The normal Macintosh two sided, double density (2S-2D) Diskettes floppy disk has 800K memory capacity. This is usually sufficient for text files and files containing line art.

Hard disks Internal hard disks are fixed components of the computer. Information stored on the internal hard disk is not portable. Information must be copied to an external hard disk, a diskette, or other portable storage devices depending upon the memory requirements.

A separate external hard drive is required to hold external hard disk cartridges for transporting memory intensive files that won't fit on diskettes. Typical cartridges for external hard drives are 44MB (44,000K), or the equivalent of 55 diskettes.²³⁹

Magnetic Tapes Magnetic tapes are for archiving only and do not have the capability to search and find information. Retrieval of information must be done sequentially. Storage capacity is approximately 200MB, or the equivalent of 250 diskettes. Special drives are necessary.²⁴⁰

CD WORM CD WORM stands for Write Once Read Many. These CDs are suitable for *permanent* archiveal storage only. When information is written onto the disk it is "burned" into the disk and cannot be altered. However it may be accessed and read many times. Storage capacity is generally 512 MB, or the equivalent of 640 diskettes. A specialized drive is required to operate this type of CD.²⁴¹

Note: CD ROMs are also available but are Read Only. They cannot write (copy) information.²⁴²

Optical Disks Information may be written and edited on optical disks in the same manner as hard disks or floppy disks, but they operate slower than hard disks. Storage capacity is approximately 600–700MB, or the equivalent of 750–875 diskettes. Optical disks require specialized drives that are not compatible with hard disks, CD WORMs, or CD ROMs.²⁴³

Effects of Output Resoluton

The user is faced with numerous choices and selections when scanning. Although this module is not intended to instruct the user in scanning techniques, some basic factors to keep in mind are the interrelationships between scanning resolution, gray levels, and output resolution.

Line art Output When scanning line art, resolution is the key factor. The scanning resolution should match the output resolution. This ensures the maximum information that the output device can print is captured.²⁴⁴

Halftone output When scanning in the Halftone Output mode, scanning resolution should match the output resolution. The scanner automatically generates a halftone screen based upon the scan resolution.²⁴⁵ The greater the scan resolution, the more gray levels possible. Do not exceed the resolution of the output device.

Contone Output Gray levels and screen rulings are key factors for Contone Output. Given a set resolution for the output device, as screen rulings increase, gray levels decrease. The reverse is also true; as screen rulings decrease, gray levels increase. The minimum number of gray levels considered acceptable are 64. To print 64 gray levels on a 400 dpi laser printer, a 50 lpi screen must be used. This is considered newspaper quality. Finer screen rulings are possible as the resolution of the output device increases.²⁴⁶

Note: As scanning resolution and gray levels increase so does the amount of memory required to store the file and the computer processing time. Users need to consider these factors as well as the end use of the image before making scanning decisions.²⁴⁷

How to Prepare for Output

- Go to the Apple and select Chooser.
Click on the icon of the desired printer. The name of the printer will appear highlighted in the display box in the upper right corner if it is available. Click on the close box to exit.²⁴⁸
- Go to the File menu and select Page Setup.
A dialogue box will appear. Select the desired printer from the Printer Type box. The selected printer must reside in the Chooser on the system that is to be used for output.²⁴⁹

Page setup options that are applicable to the selected printer will be activated. When selecting a high resolution typesetter, options such as paper type (paper or film), resolution, paper width, paper offset, and page gap will appear.²⁵⁰

Click on Okay to activate the new selections.

- Go to the File menu and select Print.
Make selections, then click on Okay. Information selected from the Chooser, Page Setup, and Print is then sent to the printer.

Note: Once the Chooser and the options in Page Setup are selected, it only necessary to go to Print, unless changes must be made in those options.

Glossary

The following definitions are the meanings that are meant to be portrayed in this training module. The terms may have other meanings and interpretations in other contexts. Italicized terms found in the definitions are also defined in the glossary.

- Active** By *selecting* an object (clicking on it), it is activated. It may be modified or used when in the active state.
- Application** The specialized set of computer commands that control input data. It is sometimes referred to as a program, although the application may only be a portion of the total program package.
- Artwork programs** Software programs that computer-generate images. There are two types of artwork programs. *Draw* or *object-orientated programs* that describe shapes as mathematical formulas, or *Paint* programs that describe shapes as clusters of dots.²⁵¹
- Bitmap**
—see Paint A storage format that saves graphic images as a pattern of dots. The dots are black or white, with no gray scale information, and may be pixel edited. Also referred to as a *Paint* format. Programs using this format are called paint programs (versus *draw* programs).²⁵²
- Camera ready** Text and graphics are in the completed form for the camera stage of a production cycle.
- Continuous tone image** An image which is not limited to black and white, but contains shades of gray. It must be converted to a black and white image for printing by the *halftone* process. Scanning will convert continuous tones to halftones.²⁵³
- Contone Output** A scanning method format used by MC View Plus which reads gray scale information. A PostScript halftone

screen is generated when the image is sent to the printer for output.²⁵⁴

- Desktop** An electronic display used by Macintosh to simulate working at a desk. Some of the items found on the desktop are *windows*, *menus*, tools, and *icons*.
- Desktop Publishing (DTP)** The DTP process brings text, artwork, graphics, and *page layout programs* together, eliminating separate typesetting and image assembly functions. *Camera-ready* copy is prepared at a computer work station.
- Dialogue Box** A box which automatically appears when the *application* needs to communicate with the user. It requires information to continue, or it may issue warnings to the user of the consequences of an action.²⁵⁵
- Digitize** The process of converting analogue information into dots.²⁵⁶
- Disks** A storage vehicle for computer information.
- Hard Disks Hard disks have a great deal of memory and can be internal, contained within the computer casing, or external and portable. Portable external hard disks are considered accessory equipment for users needing to store or transport memory intensive *files* such as scanned graphics.²⁵⁷
- Diskette, Floppy Disks Diskettes are the most common portable storage medium. They are smaller and have limited storage capacities for graphics but are well suited for documents containing text. Diskettes are also referred to as floppies, floppy disks, or disks. Macintosh uses 3 1/2" diskettes.²⁵⁸
- Draw** —see PICT A storage format that saves graphics as a sequence of mathematical commands which will draw shapes, rather than patterns of dots (as in *paint* formats). These commands recreate shapes as lines and arcs with directions for filling in with patterns. Draw formats are considered *object-orientated*.²⁵⁹ No gray scale information is possible.²⁶⁰

Encapsulated PostScript (EPSF)	A save format that uses the PostScript page description language formulated by Adobe.
File	A storage location for a single document, <i>application</i> , or system.
Folder	A storage location for single or multiple <i>files</i> . Folders are convenient methods for organizing files.
Graphics programs	Software offering image editing and camera preparation for scanned images (graphics).
Gray level	Refers to the number of shades of gray that may be printed for a <i>scanned image</i> . The possible number of gray levels depends upon the output <i>resolution</i> and the <i>halftone screen</i> ruling. For a specific resolution, gray levels will decrease as the screen becomes finer. ²⁶¹
Halftone	A method of simulating shades of gray with black and white dots of varying sizes.
Halftone Output	A scanning method format used by MC View Plus which reads pure gray scale information and mathematically generates a <i>halftone screen</i> suitable for <i>laser printers</i> at the time of the scan. ²⁶²
Icon	A graphic designed to symbolically represent an object or concept.
Integration	The process of importing one or more files from one software program into another software program.
Laser printer	A desktop printer that uses a computer directed laser beam to statically charge a drum to attract or not attract toner in the shape of the image to be printed. The toner image is then transferred from the drum to paper. ²⁶³
Layout	The designing of the appearance of a page(s), usually incorporating text and graphics.
Line art	Original images containing only black and white information. No shades of gray are present to require <i>halftone</i> screening.

- Line art Output** A scanning method format used by MC View Plus which reads information as black or white (no grays). A threshold is automatically or manually set and higher values are read as black while lower values are interpreted as white.²⁶⁴
- Line copy** Text containing only black and white information. No shades of gray are present to require *halftone* screening.
- Link** A function available in Quark which allows text boxes to be joined in a consecutive manner. Text will flow from one text box to the next as the boxes are filled.²⁶⁵
- Mechanicals** *Camera ready* art.
- Menu** A list of commands that can be activated.
- Module** A training unit that is one complete segment of a larger training program.
- Monitor** Computer viewing *screen*.
- Object-orientated** Programs or formats that save graphics as a sequence of mathematical commands which will draw shapes, rather than patterns of dots (such as in *paint* formats). These commands recreate shapes as lines and arcs with directions for filling in with patterns. Object-orientated programs and formats are also referred to as *draw* programs or *PICT* (Picture) formats.²⁶⁶ No gray scale information is possible.²⁶⁷
- Page layout programs** The primary function is designing pages that utilize both text and graphics.
- Paint**
—see *Bitmap* A save format that stores graphic images as a pattern of dots. The dots are black or white, with no gray-scale information, and may be *pixel* edited. Also referred to as a *bitmap* format. Programs using this format are called *paint* programs.²⁶⁸ No gray-scale information is possible.²⁶⁹
- Paste up** Placement of graphics and text in a layout. Paste ups can be done mechanically or electronically.

- PICT (Picture)** A save format that stores graphics as a sequence of mathematical commands which will draw shapes, rather than patterns of dots (as in *paint* formats). These commands recreate shapes as lines and arcs with directions for filling in with patterns. PICT formats are considered *draw* or *object-orientated* formats.²⁷⁰ No gray scale information is possible.²⁷¹
- Pixel** A single picture element. Can be solid black or white to represent *line art*, but usually the term pixel contains a matrix of dots, some turned on and some turned off to represent varying degrees of grayness.²⁷²
- PostScript** A page description computer language developed by Adobe Systems.
- Preview image** The *bitmap* representation of the image that is viewed on the monitor. It may or may not be an accurate representation of the final output.²⁷³
- Publication** Small-to-medium sized printed pieces requiring text, artwork, and graphics. Types of works printed are annual reports, brochures, advertisements, newsletters, and magazines.
- Resolution** The number of dots per inch (dpi) that a particular device is capable of producing to represent images. *Scanners, monitors,* and output devices are described by their resolution. As dpi increase, the resolution increases as well. A typical Macintosh monitor has a resolution of 72 dpi, a *laser printer* is 300–400 dpi, and professional typesetters range from 1270–2540 dpi.²⁷⁴
- Scale** Changing sizes of an object or image. Height and width may be changed in the same proportions, or distorted by altering height and width in differing proportions.
- Scanned images** Graphics which have been *digitized* by a *scanner* so that they may be stored and used in a computer work environment.²⁷⁵
- Scanner** An electronic device that converts images into a series of dots. The dots may be solid black and white to represent line art, or the dots may contain a matrix of dots with

varying numbers of them turned on and off to represent shades of gray.²⁷⁶

Select To activate an item, usually by clicking or dragging in a pull down/across motion.

Separations (process color) The film or printout that represents the amount of a single process color present in an original color image. Four separations are required to reproduce an original color image, since each of the four process colors, cyan, magenta, yellow, and black, must be represented. This can be accomplished by photographic separation techniques or Quark is capable of printing process color separations.²⁷⁷

Separations (spot color) The film or printout that represents the amount of a single flat color used as a design element. When an file contains flat color in specified areas in addition to black and white, then Quark can print one page for each of the spot colors or the photographic process can produce a spot color negative.²⁷⁸

Screen The *halftone* technique of representing gray tones by varying shapes and sizes of black and white dots.

The “mesh” that is placed over a *continuous tone image* to break it down into dots.

Screen is also another term used for a computer *monitor*.

Spot color A flat color that is used as a design tool. A separate plate is made for this color on the printing press.²⁷⁹

Stripping The placing of graphics and line work into a page layout so that printing plates can be made. Traditional prepress strips film negatives into place, and electronic stripping places electronic representations of the graphics and line work on the computer monitor.

Template Is a temporary background image or shape used as a guide for artwork. In Adobe Illustrator it is a *PICT* format that is imported and viewed on the *monitor* to aid the artist in rendering an image using Illustrator tools.²⁸⁰

- Thumbnails** Small representations of designs or pages so that an overall concept is perceived.
- TIFF** (Tagged Image File Format) A format that *scanners* use to represent images. The TIFF format stores gray scale information as well as black and white *line art*.²⁸¹
- Unlink** In Quark this refers to the breaking of the chains that join text boxes together. These links enable text to flow consecutively from one text box to another as the boxes are filled with text.²⁸²
- Window** The viewing area from which all documents and directories are displayed on the *monitor* in *desktop publishing* systems.
- Word processing programs** The primary function is formatting straight text matter.

Appendix A

Summary of Save Formats

- EPSF or EPS** Encapsulated PostScript. A form of PostScript used to describe graphics.
- Paint** Bitmap or pixel orientated format or program.
A storage format that saves graphic images as a pattern of dots. The dots are black or white, with no grayscale information, and may be pixel edited. Programs using this format are called paint programs (versus draw programs).²⁸³
- PICT (Picture)** Draw or or object orientated format or program.
A storage format that saves graphics as a sequence of mathematical commands which will draw shapes, rather than duplicating patterns of dots (as in paint formats). These commands recreate shapes as lines and arcs with directions for filling in with patterns. Draw formats are considered object-orientated.²⁸⁴
- PostScript** A page description computer language that describes formats pages, and describes text and graphics through mathematical commands.²⁸⁵
- TIFF** Tagged Image File Format. A format that scanners use to represent images. The TIFF format stores gray-scale information as well as black and white line art.²⁸⁶
- TIFF Uncompressed** The maximum information the scanner was able to read and save in the TIFF format.²⁸⁷
- TIFF PackBits** Standard TIFF format with single data compression. TIFF data is encoded in such a way that it is compressed for storage and transmission, but is uncompressed for display and output. Suitable only for line art, not for gray scale information.²⁸⁸

TIFF CCITT Standard TIFF format with high data compression. TIFF data is encoded in such a way that it is compressed for storage and transmission, but is uncompressed for display and output. Suitable only for line art, not for gray scale information.²⁸⁹

TIFF LZW Standard TIFF format with data compression. TIFF data is encoded in such a way that it is compressed for storage and transmission, but is uncompressed for display and output. Suitable gray scale information.²⁹⁰

Appendix B

Heirarchy of Memory Terms

Bit	The basic unit of measurement for computers. It indicates whether an electric pulse has been turned on or off. A bit is always present, but is negative or positive depending on if the signal is on or off. ²⁹¹
Byte	A unit describing a designated string of bits. Eight bits are commonly found as a byte, because eight bits can describe 256 different conditions. A minimum of 64 conditions (gray levels) is considered necessary for halftones, with 256 being optimum for halftone reproduction. ²⁹²
Word (K)	The unit usually manipulated at one time by a computer. A specified number of bytes will comprise a word. Macintosh uses 1024 bytes to a word (K). ²⁹³
Megabyte (MB)	The equivalent of 1000K.

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