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Gregory C. Damman

COPYRIGHT OF COMPUTER DISPLAY SCREENS: SUMMARY AND SUGGESTIONS

By GREGORY C. DAMMAN*

TABLE OF CONTENTS

I. THE COMPETING INTERESTS

Imagine that you are an "expert" in the complex, and sometimes convoluted, field of copyright law as it pertains to computer screen displays. Litigation in your area of expertise has been limited to a small number of cases litigated in the past few years, so you have spent most of your office time familiarizing yourself with the applicable law and reflecting upon the circumstances of your friends, Joe User and Jack Creator.

Joe User runs the local hardware store. His personal computer is vital to his business. He uses the computer to fill out and print invoices, keep track of inventory, write business correspondence, figure budgets, and keep financial records. Joe spent hundreds of hours learning how to operate "Original" (*Original*) the computer software program he uses. Joe purchased *Original* from Major Software Company for $500. Recently, Joe became aware of "Clone" (*Clone*), a new software program sold by Small Competitor Company, which has screen displays and a command menu nearly identical to *Original*'s. However, the program code that creates the screen display in *Clone* is entirely different from the corresponding *Original* program. *Clone* sells for $50, and is superior to *Original* in many respects. Joe is impressed with the possibility of improving his computer system at a low cost, without the need to learn new command terms. He considers buying *Clone*.

Jack Creator is the founder and CEO of Major Software Company. He spent hundreds of hours creating *Original*, which was considered innovative and extremely useful for performing computing tasks for small businesses, such as Joe's hardware store. Jack's long hours of hard work and creativity paid off; his program is a top-seller in the software industry with annual sales in excess of $1 million. Recently, however, sales have tailed off and Major is suffering financially. Jack

suspected the drop in sales was a result of consumers' purchasing the lower-priced *Clone* program instead of *Original*. Following the advice of his lawyer, Jack Creator sued the makers of *Clone*, alleging copyright infringement of *Original*'s screen display.

Will Jack win his lawsuit? Should he? How will future software purchasers like Joe be affected? How will software manufacturers like Major Software Company and Small Competitor Company be affected?

II. THE COPYRIGHT "BASICS"

The example above involving Jack Creator and Joe User illustrates a classic copyright "balancing" issue. Our founding fathers recognized the desirability of granting monopoly protection to those who expended creative energy in the arts and sciences.[1] By guaranteeing that an artist or writer would receive the benefit of his creative efforts, the drafters of the Constitution seemingly intended to provide the incentive to create, thereby furthering progress in the arts and sciences. Likewise, our founding fathers recognized the socially desirable effects of granting the public access to works in the arts and sciences; if works in the arts and sciences could be used and improved upon by people other than the works' creators, progress in the arts and sciences would result.[2] Thus, the noble goal of copyright is to provide incentive and encourage use, while balancing the need for protection against the need for competition.[3] The example above illustrates that copyright protection is needed to give Jack Creator the incentive to create a software program. However, granting Jack Creator too much protection would limit the

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1. The Constitution authorizes Congress "[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." U.S. CONST. art. I, § 8, cl. 8.

2. Mazer v. Stein, 347 U.S. 201 (1954), provides an excellent summary of the purpose of copyright protection. It states:

> "[t]he copyright law, like the patent statutes, makes reward to the owner a secondary consideration."

Id. at 219. (quoting United States v. Paramount Pictures, 334 U.S. 131, 158 (1948)).

> However, it is "intended definitely to grant valuable, enforceable rights to authors, publishers, etc., without burdensome requirements; to afford greater encouragement to the production of literary [or artistic] works of lasting benefit to the world."

Id. (quoting Washingtonian Pub. Co. v. Pearson, 306 U.S. 30, 36 (1939)).

3. *See, e.g.,* Sayre v. Moore, 102 Rev. Rep. 138 (1785) (Lord Mansfield). *Sayre* contains an often-quoted passage describing the balancing of protection and competition. Lord Mansfield wrote that:

> [W]e must take care to guard against two extremes equally prejudicial; the one, that men of ability, who have employed their time for the service of the community, may not be deprived of their just merits, and the reward for their ingenuity and labour; the other, that the world may not be deprived of improvements, not the progress of the arts be retarded.

Id. at 140 n.6.

software design alternatives Small Competitor Company would be encouraged to create. The end consequence of granting too much protection would be that computer owners, like Joe User, would be denied the valuable use of inexpensive, improved software. This balancing of use and incentive, results in the fighting issue in computer display screen copyright cases: whether screen displays are entitled to copyright protection, and, if they are, whether that protection should be broad or narrow.

III. THE ORIGINS OF "LOOK AND FEEL"

The phrase "look and feel" has been used to describe copyright protection which extends *beyond* protection for verbatim copying.[4] This definition is somewhat inaccurate, however, because courts have long held, without using the phrase "look and feel,"[5] that, under certain circumstances, copyright protection exists for non-verbatim copying. The phrase more properly used to describe non-verbatim copyright, as advanced by Professor Nimmer, is "comprehensive, non-literal similarity."[6] When a court undertakes a "look and feel" analysis, it is merely attempting to determine whether the infringing work is "substantially similar." "Look and feel" protection is valuable to software companies that originated popular text-based applications programs because characteristics of the screen display can not be used by competing manufacturers, even though those manufacturers might create programs with identical, or nearly identical, screen displays using entirely different program codes.[7] Properly analyzed, the "look and feel" issue initially involves determining, through application of existing copyright law,

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4. *See, e.g.*, Note, *A Thousand Clones: The Scope of Copyright Protection in the "Look and Feel" of Computer Programs*, 63 WASH. L. REV. 195 (1988) [hereinafter Note, *A Thousand Clones*]; Comment, Broderbund Software, Inc. v. Unison World, Inc.: *"Look and Feel" Copyright Protection for the Display Screens of an Application Computer Program*, 13 RUTGERS COMPUTER & TECH. L.J. 105 (1987) [hereinafter Comment, *"Look and Feel"*].

5. Interestingly enough, none of the cases that have addressed the "look and feel" issue have used the phrase "look and feel." The phrases used by the courts include, for example, "total concept and feel," "structure, sequence and organization," and "sequence and flow." The phrases used by the courts will be discussed below. *See infra* text accompanying notes 46, 54, 132-33. The phrase "look and feel" apparently is a creature of the media and commentators, who no doubt found the phrase more "catchy" than those used by the courts.

6. 3 M. NIMMER & D. NIMMER, NIMMER ON COPYRIGHT § 13.03[A][1] (1989).

7. Regular users of applications software programs unavoidably become accustomed to the characteristics of the screen display such as the screen sequence and appearance, the response time between commands, the types of commands the program uses, the way the program indicates that the disk drive is running, and the colors and highlighting of certain text.

whether computer screen displays are entitled to copyright protection. If so, the display is protected to the extent of its "look and feel."

IV. ARE COMPUTER SCREEN DISPLAYS COPYRIGHTABLE?

In order to determine whether computer screen displays are copyrightable, it is necessary to examine the applicable language of the Copyright Act of 1976 (the "Act").[8] The Act provides protection for "original works of authorship fixed in any tangible medium of expression."[9] The initial inquiry, when applying the Act to computer display screens, involves examining two copyright concepts that rarely pose problems in traditional copyright cases: (1) what type of "work" is involved, and (2) whether the work is "fixed." The unique technology used to create computer display screens prompts questions about whether the displays are "works of authorship" that can be "fixed" in a tangible medium of expression.

A. WORKS OF AUTHORSHIP

The "works" protected by the Act include "literary works,"[10] "audiovisual works,"[11] and "compilations."[12] Other types of "works" are protected by the Act, but the three listed above are most commonly cited in computer display screen copyright cases. The type of "work" alleged to exist depends upon whether the computer screen display is a part of a video game or a text-based applications[13] program. Courts hearing cases involving video game screens have uniformly held that the display screen is copyrightable as an "audiovisual work."[14] However, courts reviewing screen displays that are part of text-based applications programs, have wavered, and have not always found the displays

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8. Copyright Act of 1976, Pub. L. No. 94-553, 90 Stat. 2598 (current version at 17 U.S.C. §§ 101-914 (1982)).

9. 17 U.S.C. § 102(a) (1982).

10. "Literary works" are expressed in words, numbers, or other verbal or numerical symbols or indicia. *Id.* § 101.

11. "Audiovisual works" consist of a "series of related images" intended to be shown by machine or devices, together with accompanying sound. *Id.* § 101.

12. "Compilations" are formed by collecting and assembling preexisting materials, or by data that are selected, coordinated, or arranged in such a way that the resulting work as a whole constitutes an original work of authorship. *Id.* § 101. Section 103 of the Act limits copyright protection for a compilation to the extent of the author's contribution to the work. *Id.* § 103.

13. Text-based applications programs include word processors, databases, spreadsheets, etc.

14. *See, e.g.,* M. Kramer Mfg. Co. v. Andrews, 783 F.2d 421, 436 (4th Cir. 1986); Atari, Inc. v. North Am. Philips Consumer Elecs. Corp., 672 F.2d 607, 615 (7th Cir. 1982), *cert. denied,* 459 U.S. 380 (1982); Midway Mfg. Co. v. Dirkschneider, 543 F.Supp. 466, 479 (D. Neb. 1981).

to be copyrightable.[15]

The court in *Manufacturers Technologies, Inc. v. CAMS, Inc.*, designated the screen a "compilation."[16] Another court, in *Digital Communications v. Softklone Distributing*, found the screen to be copyrightable either as a "literary work" or a "compilation."[17] A third court, in *Broderbund Software, Inc. v. Unison World*, apparently assumed, without discussion, that the screen was an "audiovisual work."[18] As of this writing, *CAMS*, *Softklone*, and *Broderbund* are the only cases that have been litigated and that directly address the copyrightability of text-based, computer application, program screen displays.[19] Given the limited number of courts that have addressed the issue, it is not surprising that variations exist in the characterization of the "work" comprising a screen display. Broad, distinct differences in the appearance of display screens, however, make application of a uniform "work" characterization inappropriate.[20]

B. FIXATION

The "fixation" requirement has posed less of a problem for screen display plaintiffs and courts than the "work" requirement.[21] Courts have recognized that computer display screens are "works of author-

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15. *See infra* text accompanying notes 16-19.

16. 706 F. Supp. 984, 993 (D. Conn. 1989).

17. 659 F.Supp. 449, 462-63 (N.D. Ga. 1987). The *Softklone* court held that the display screens were copyrightable as either a "literary work" or a "compilation." The plaintiff, however, only asserted that the screens were copyrightable as "compilations." The court noted that "although it is not dispositive, . . . the Copyright Office granted the plaintiff a copyright registration on the status screen as a "compilation." *Id.* at 463. "Compilation," of course, merely describes the form which one of the "works of authorship" set out in the Copyright Act may take. *See* 17 U.S.C. § 102 (1982).

18. 648 F. Supp. 1127, 1131 (N.D. Cal. 1986).

19. *See also Broderbund*, 648 F. Supp. at 1133 (citing Whelan Assoc. v. Jaslow Dental Lab., 797 F.2d 1222 (3d Cir. 1986)) (proposing that "copyright protection is not limited to the literal aspects of a computer program, but . . . extends to the overall structure of a program, *including its audiovisual displays*" (emphasis added)). However, as will be discussed *infra*, text accompanying notes 32-34, *Whelan* did not so hold.

20. It is inappropriate to designate all screen displays as one type of "work" as is apparent from the screen displays at issue in *Broderbund* and *Softklone*. Pictorial illustrations were a central part of the display at issue in *Broderbund*. Thus, characterizing the displays as solely a "literary work" or a "compilation" would be inaccurate, and could result in some confusion as to whether protection was intended for the pictorial illustrations. In *Softklone*, on the other hand, a form-type display, without pictorial illustrations, was involved. Characterizing the *Softklone* display as an "audiovisual work" would, likewise, not be proper.

21. A work is fixed in a tangible medium of expression "when its embodiment in a copy or phonorecord, by or under the authority of the author, is sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration." 17 U.S.C. § 101 (1982).

ship" (whether characterized as "audiovisual," "literary," or "compilations"), and that the displays are "fixed" because screen displays are contained in the program code and can be generated from the program code with the aid of a computer.[22]

Many issues remain unresolved in the area of computer display screen copyright. For example, when is there "expression"? When is the expression "original"? What defenses are available? The preceding questions are best answered by examining the three cases that have directly addressed the copyrightability of computer application program display screens, as well as the position of the Copyright Office on the subject.

V. CASES

A. *BRODERBUND*

1. *Facts*

Broderbund Software, Inc. v. Unison World[23] was the first case to directly address the copyrightability of computer applications program display screens. In 1983, Pixellite Software began developing a computer software program that enabled users to create personalized greeting cards. The recipient needed a computer in order to view the card. Apparently, recognizing the limited market for greeting cards viewable solely by computer, Broderbund encouraged Pixellite to change the program so that greeting cards, banners, signs, and posters could be printed by the user. This eliminated the need for a card recipient to use a computer. Pixellite made the suggested changes, and, within a year, Broderbund had obtained the exclusive license to distribute the program, called "The Print Shop" (*The Print Shop*), and began marketing the program.

Unison sought to make *The Print Shop*, an Apple program, compatible with IBM computers. Unison began negotiating with Broderbund in May, 1984, for the conversion rights to *The Print Shop*. During the negotiations, Broderbund showed the program code to representatives from Unison and made it clear to Unison that the IBM version was to be identical to the Apple version. During the negotiations, Unison began work on its IBM duplicate of *The Print Shop*.

Eventually, negotiations broke down. At the time of the breakdown, Unison had already completed duplication of a substantial portion of *The Print Shop*. Unison's software designer went on to finish *The Print Shop* duplicate, and, in fact, "enhanced" the program so that

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22. M. Kramer Mfg. Co. v. Andrews, 783 F.2d 421, 442 (4th Cir. 1986).
23. 648 F. Supp. 1127 (N.D. Cal. 1986).

the Unison IBM version had more features than Apple's version.[24]

In March, 1985, Unison began marketing its IBM version of *The Print Shop* under the name "Printmaster" (*Printmaster*). In May, 1985, Broderbund and Pixellite sued Unison, alleging copyright infringement.

2. The Opinion

The *Broderbund* court began its opinion by stating that the copyrightability of audiovisual displays was the "threshold issue."[25] Citing *Mazer v. Stein*,[26] the court focused on the fundamental copyright principle that, while expressions of ideas are copyrightable, the ideas themselves are not. Unison argued that the idea and expression of *The Print Shop* had "merged" because there was only one way to express the idea of a computer program that printed greeting cards.[27] The plaintiffs produced evidence of another program, "Stickybear Printer" (*Stickybear Printer*), which also printed greeting cards, banners, and posters, but used substantially different menu screens and screen sequences. Because another program was available with the same idea, but a different manner of expression, the idea and expression were obviously separable. Accordingly, the court held that the merger doctrine was inapplicable.[28]

The lack of case law in the area of computer display screen copyrights forced the *Broderbund* court to rely upon two cases that had not

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24. *Id.* at 1131.

25. *Id.*

26. 347 U.S. 201 (1954).

27. *Broderbund*, 648 F. Supp. at 1131-32 (citing Herbert Rosenthal Jewelry Corp. v. Kalpakian, 446 F.2d 738 (9th Cir. 1971)). The *Kalpakian* court held that the number of ways the idea of a "jewel encrusted bee pin" could be expressed was so limited that granting copyright protection to one manufacturer would amount to granting a monopoly. The idea of a "jewel encrusted bee pin" could not be distinguished from its expression; merger prevented the plaintiff from prevailing on the infringement claim. *Kalpakian*, 446 F.2d at 742.

28. One commentator has argued that the *Broderbund* court incorrectly held that the substantial similarity between the functions of *Stickybear Printer* and *The Print Shop* meant that the two programs had the same underlying idea. *See* Comment, *"Look and Feel"*, *supra* note 4, at 127. The court's error stems from its failure to recognize that *Stickybear Printer* was a program designed for use by children. The function of the audiovisual display of *Stickybear Printer* was to enable *children* to create and print greeting cards, etc. *The Print Shop* audiovisual display, on the other hand, was intended to allow *adults* to print greeting cards, etc. It is quite possible that the number of ways an audiovisual display screen may be configured in order to allow an adult to print greeting cards is just as limited as the number of ways a "jewel encrusted bee pin" may be designed.

If the reasoning advanced by the court in *Kalpakian, see supra* note 27 and accompanying text, is followed, the court's decision to grant protection for *The Print Shop* screens is arguably incorrect. Questions remain, however, regarding the accuracy of the reasoning employed by the *Kalpakian* court.

expressly dealt with the issue. Unison urged the court to follow the reasoning of *Synercom Technology, Inc. v. University Computer Co.*,[29] which held that a computer's user interface was not copyrightable.[30] The plaintiffs argued that the reasoning in *Whelan Associates, Inc. v. Jaslow Dental Laboratory, Inc.*,[31] should be followed.

3. *The* Whelan *Error*

In *Whelan*, the plaintiff designed a program to manage the records of a dental laboratory. The defendant, a former business associate of the plaintiff, began marketing a similar program designed for use on a different type of computer. The court's holding, as it applied to the computer display screen, was merely that the screen display could serve as indirect evidence of copying of the program code.[32] The *Broderbund* court, however, held that *Whelan* stood for the proposition that "copyright protection is not limited to the literal aspects of a computer program, but rather extends to the overall structure of a program, *including its audiovisual displays.*"[33] The court's error touched off a flurry of criticism from commentators and other courts facing the issue of the copyrightability of computer screen displays.[34]

4. *Other Defenses*

Unison also argued that *The Print Shop* screen displays were ineligible for copyright because no "aesthetic elements" could be separated from the utilitarian aspects of the screen displays.[35] The court found Unison's argument unpersuasive, stating that it was "clear that the structure, sequence, and layout of the audiovisual displays in [*The Print Shop*] were dictated primarily by artistic and aesthetic considerations,

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29. 462 F. Supp. 1003 (N.D. Tex. 1978).

30. *Id.* The *Synercom* court recognized the distinction between the idea underlying a computer program, and the idea underlying the "user interface" of a computer program. The case did not involve a display screen, but, instead, involved the input formats of a statistical analysis program. The court recognized that the idea of the program was the process of computerization of statistical formulas, while the idea of the input formats was the ordering and sequencing of data. The court found that the expression of the idea of the input formats was indistinguishable from the idea; therefore, the formats were not copyrightable. *Id.*

31. 797 F.2d 1222 (3d Cir. 1986).

32. *Id.* at 1244.

33. *Broderbund*, 648 F. Supp. at 1133 (emphasis added).

34. The *Softklone* and *CAMS* courts were both critical of the *Broderbund* court's interpretation of the holding in *Whelan*. *See Softklone*, 659 F. Supp. at 461-62; *CAMS*, 706 F. Supp at 992-93. *See also* Comment, *"Look and Feel"*, *supra* note 4, at 129; Note, *Copyright Protection for Computer Screen Displays*, 72 MINN. L. REV. 1123, 1145 (1988); Note, *A Thousand Clones, supra* note 4, at 201 n.52 (1988).

35. *Broderbund*, 648 F. Supp. at 1133-34 (citing Durham Indus., Inc. v. Tomy Corp., 630 F.2d 905, 913 (2d Cir. 1980)).

and not by utilitarian or mechanical ones."[36] The selection and arrangement of words on the screen was "arbitrary," according to the court, and thus separable aesthetic elements existed.

Finally, Unison argued that the "rules and instructions" doctrine prevented Broderbund from copyrighting *The Print Shop* screen displays. According to that doctrine, "rules and instructions for unprotected games or processes cannot themselves be protected under the copyright laws."[37] Unison characterized its "rules and instructions" defense in the same manner as it had characterized its "merger" defense,[38] arguing that when only a limited number of ways existed to do something, granting copyright protection in the "rules and instructions" of that process amounted to granting a monopoly on the idea related to those "rules and instructions." Given the similarity of this argument to Unison's "merger" argument, it was not surprising that the court reasoned that the existence of *Stickybear Printer*, a similar program with different rules and instructions, disproved the defendant's argument.[39] Furthermore, according to the court, the aesthetically pleasing aspects of *The Print Shop* menu screens rendered them outside the "rules and instructions" doctrine.[40]

5. Copying

Having disposed of Unison's defenses, the court next undertook to determine whether Unison had copied Broderbund's work. The "circumstantial analysis of copying" was used, which required not only a finding that Unison had "access" to Broderbund's work, but that there was also "substantial similarity" between *The Print Shop* and *Printmaster*.[41] The court had no trouble finding access because Unison possessed several copies of *The Print Shop*. The court used the two-step test enunciated in *Sid & Marty Krofft Television Productions, Inc. v. McDonald's Corp*,[42] to address substantial similarity. According to the *Broderbund* court, the *Krofft* test requires the application of "(1) an 'extrinsic' test aimed at determining whether there exists a substantial similarity in underlying ideas; and (2) an 'intrinsic' test to ascertain whether there exists a substantial similarity in the expression of the

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36. *Id.* at 1134.

37. *Id.*

38. *Id.* at 1134 (citing Affiliated Hosp. Prods., Inc. v. Merdel Game Mfg. Co., 513 F.2d 1183 (2d Cir. 1975); Decorative Aides Corp. v. Staple Sewing Aides Corp., 497 F. Supp. 154 (S.D.N.Y. 1980)).

39. *Id.* at 1134.

40. *Id.*

41. *See* Sid & Marty Krofft Television Prods., Inc. v. McDonald's Corp., 562 F.2d 1157, 1162 (9th Cir. 1977).

42. *Id.* at 1164.

underlying idea."[43] Under the *Krofft* court's standards, expert testimony is admissible in the "extrinsic" test; however, the "intrinsic" test is based solely on how the "ordinary reasonable person" would respond to the product.[44]

After reviewing the expert testimony on substantial similarity, the court found that *The Print Shop* and *Printmaster* consisted of the same idea, and had virtually identical purposes and uses. Thus, the two works met the "extrinsic" portion of the *Krofft* test for substantial similarity.[45] As for the "intrinsic" portion of the *Krofft* test, the court framed the issue as "whether the infringing work captures the 'total concept and feel' of the protected work."[46] The court viewed the two works at trial and, after listing, in detail, some of the similarities it found, had no difficulty concluding that there was substantial similarity. *Broderbund* started the "look and feel" ball rolling, but failed to clearly define the direction the ball would roll.

B. SOFTKLONE

1. Facts

Six months after the *Broderbund* decision, the issue of copyrightability of computer screen displays arose again, in *Digital Communications v. Softklone Distributing.*[47] In *Softklone*, the plaintiff, Digital, owned the rights to "Crosstalk XVI" (*Crosstalk XVI*), an extremely successful microcomputer telecommunications program developed by Microstuff in the early 1980s.[48] The defendant, Softklone, was a marketing company which handled "clones"[49] of successful computer software programs that were created by its parent company, Foretec. Foretec produced a "clone" of the *Crosstalk XVI* program called "Mirror" (*Mirror*)[50] that Softklone began to market in December, 1985. Meanwhile, Microstuff had obtained copyright registrations on the *Crosstalk XVI* user manual and computer program in October, 1985, but

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43. *Broderbund*, 648 F. Supp. at 1136.

44. *Krofft*, 562 F.2d at 1164.

45. *See Broderbund*, 648 F. Supp. at 1136-37. The court noted that it was obvious, even without the expert testimony, that *The Print Shop* and *Printmaster* were substantially similar. *Id.*

46. *Id.* at 1137 (quoting Roth Greeting Cards v. United Card Co., 429 F.2d 1106, 1110 (9th Cir. 1970)).

47. 659 F. Supp. 449 (N.D. Ga. 1987).

48. The *Crosstalk XVI* program was designed to enable a computer to access information in another computer via phone lines. *Id.* at 452.

49. "Clone" programs generate identical screen displays and use the same commands as the original program, but the "clone" screen is generated by an entirely different underlying program. *See* Note, *A Thousand Clones, supra* note 4, at 196.

50. *Softklone*, 659 F. Supp. at 453.

did not obtain the first of its two copyright registrations on the display screens until December, 1985—the same month, Softklone began marketing *Mirror*.[51] *Mirror* performed the same functions as *Crosstalk XVI* and had a status screen[52] that was nearly identical to the *Crosstalk XVI* status screen. Microstuff sued Softklone, alleging infringement of the *Crosstalk XVI* status screen display copyright. Digital became a party to this action when it purchased Microstuff sometime after the initiation of the suit.

2. The Opinion

First, the *Softklone* court noted that computer programs are copyrightable as "literary works."[53] Next, the court probed the reasoning of *Whelan*, citing the case for the proposition that "the copyright protection of a computer program extends beyond the program's literal souce and object codes to its 'structure, sequence and organization.' "[54] After noting the *Broderbund* court's "overexpansive and erroneous reading" of *Whelan*,[55] the *Softklone* court concluded that a computer program copyright does not extend to the screen displays generated by that program. In order for a computer program copyright to protect the screen display, the court believed the screen display was required to be a "copy" or "reproduction" of the literary work embodied in the computer program.[56] But, because many different programs could produce the same screen display, the screen was not to be considered a "copy" of the underlying computer program. On the other hand, because that program could produce only one screen display, a computer program was to be considered a "copy" of its screen display.[57] As a result, the *Softklone* court would not accept the argument that Digital's computer program copyright protected the screen and required Digital to establish an alternate means of protecting the *Crosstalk XVI* status screen.

As its alternate means of protecting the *Crosstalk XVI* status screen, Digital relied upon the status screen copyright registrations the Copyright Office had granted to it. These registrations constituted

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51. *Id.*

52. The *Crosstalk XVI* status screen listed the operating parameters of the computer being used. The operating parameters included the data transmission speed and other terminal configurations which must be set in order for the computer to properly connect with another computer. *Id.*

53. *Id.* at 454.

54. *Id.* at 455.

55. *Id.*

56. *Id.* The court's reasoning in this regard is suspect because the screen display and the program that generates that display are inseparable, as far as the "work of authorship" is concerned. The underlying program was created in order to generate the screen display, and thus is a part of the "work of authorship" comprising the program.

57. *Id.* at 456.

prima facie evidence of the validity of the copyright of the status screens.[58] As a result, Softklone had the burden of coming forth with evidence of the invalidity of the display screen copyright.[59]

3. Defenses

Softklone argued that the *Crosstalk XVI* status screen was not copyrightable because the screens fell within the *Baker v. Selden*[60] prohibition of copyright protection for "blank forms" which fail to convey information themselves, and because the screens were a "necessary expression" of their idea.[61] The court disagreed.

a. Elements of the status screen as "necessary expression"

In *Softklone*, the "idea" of the status screen was the process or manner by which it operated, and the "expression" was the method by which that idea was communicated to the user.[62] As ideas, the court listed (1) the use of a screen to reflect the status of a program; (2) the use of a command-driven program; and (3) the typing of two symbols to activate a specific command.[63] Aspects of the status screen which were unrelated to how the screen operated and therefore constituted "expression," included: (1) the arrangement of the parameter/command terms, and (2) the highlighting and capitalization of two letters in the command terms.[64]

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58. 17 U.S.C. § 410(c) (1976).

59. *Softklone*, 659 F. Supp. at 453 (citing Transgo, Inc. v. Ajac Transmission Parts Corp., 768 F.2d 1001 (9th Cir. 1985), *cert. denied*, 474 U.S. 1059 (1986)).

60. 101 U.S. 99 (1879). In *Baker*, the plaintiff sought copyright protection for forms contained in the appendix of several books explaining the plaintiff's new "double-entry bookkeeping" system. The plaintiff claimed that the system could not be used without using the plaintiff's forms. The court held that where the idea the plaintiff's book teaches

> cannot be used without employing the methods and diagrams used to illustrate the book, or such as are similar to them, such methods and diagrams are to be considered as necessary incidents to the art, and given therewith to the public . . . for the purpose of practical application.

Id. at 103. *Baker* stands for the proposition that necessary expressions incident to an idea are not copyrightable, and that blank forms must themselves "convey information" in order to be copyrightable. *Softklone*, 659 F. Supp. at 457.

61. *Softklone*, 659 F. Supp. at 456-57.

62. *Id.* at 458. The *Softklone* court made note of Judge Higginbotham's famous "figure-H gear shift" analogy, put forth in *Synercom*. Higginbotham stated that the idea of a "figure-H" for a gear shift pattern was analogous to a computer's "format." In the case of the gear shift pattern, other automobile manufacturers were free to use the pattern, but could not copy the expression of the pattern contained in, for example, a driver's manual, diagram, photograph, driver's training manual, or otherwise. *Synercom*, 462 F. Supp. 1003, 1013 (N.D. Tex. 1978).

63. *Softklone*, 659 F. Supp. at 459.

64. *Id.*

Softklone, like the defendant in *Broderbund*, cited *Synercom* as support for its position that the status screen was not copyrightable.[65] The court held that *Synercom* differed factually because the *Synercom* defendant, unlike Softklone, had not copied anything that was purely irrelevant to the functioning of the program.[66] The court further distinguished *Synercom* by holding that the status screen involved "considerable stylistic creativity and authorship above and beyond the sequence of data."[67] The court's reasoning in this regard raises several questions. First, is there such a thing as a text-based applications program consisting merely of the haphazard sequencing of data? Probably not. If a display screen is to be used as an interface, information must appear somewhere on the screen. This dictates that the programmer must decide where to place the information. This raises another question, Is one programmer's view of the proper way to place information on the screen to be considered more creative than another's? If so, a basic copyright concept—that artistic merit should not determine whether a work is copyrightable—is violated. If this concept is not to be violated, then all display screens that reflect the programmer's decision regarding where the information should appear on the screen are copyrightable.

b. Are screen areas copyrightable?

The *Softklone* court's approach appears to allow copyright of the positioning of text in a particular area on a display screen. For example, the creator of a word processing program could copyright the "creative expression" embodied in the placement of the document file name and cursor status line on the bottom line of the screen display. Should the creator be allowed to obtain such a copyright? Arguably no, because the nature of word processing software is such that the cursor remains at the bottom of the screen most of the time.[68] Otherwise, the writer would be unable to view what had just been written. Placing the file name and cursor status line at the bottom of the screen makes it easier for the user to refer to those two features and, therefore, it is the "best" way to arrange the screen. All word processing program creators should be allowed to place a file name, cursor status line, or any other information they choose, at the bottom of the screen. Software creators

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65. *Id.* at 459-60.

66. *Id.* at 460.

67. *Id.*

68. Nearly all word processing programs begin with the cursor in the upper left-hand corner of the screen. Once the document reaches a length that is longer than what may be displayed entirely on the screen, the cursor remains at the bottom of the screen as text is added. An exception to this general characteristic occurs when the writer moves the cursor to different areas of the screen for editing purposes.

should not be able to "reserve" certain areas of the screen display for their own use.[69]

According to the court, Digital could copyright the positioning of the command/parameter terms on the display screen because Softklone could have arranged the command/parameter terms in a number of different ways without "hampering the operation of the program."[70] Unfortunately, the court overlooked the fact that there is often one "best" way to arrange information on a computer display screen. Certainly Softklone could have arranged the command/parameter terms differently, but should it have been forced to do so? The issue boils down to deciding whether copyright protection is intended to give a developer a monopoly over the "best," or most efficient way, of expressing an idea. The *Softklone* court concluded that copyright protection might, in fact, result in monopoly.

c. "Forms" that "convey information?"

Softklone contended that the status screen was a "blank form," and that it failed to meet the information conveyance requirement of copyright.[71] The court stated that the determination of "whether a work conveys information must be made on a case-by-case basis."[72] Citing *Whelan* and *Synercom*, the court held that arranging the command terms under descriptive parameter headings, and capitalizing and highlighting letters of the commands, assisted the user in "knowing which symbols to enter to activate the various commands."[73] Thus, the status screen conveyed information.

Softklone also registered a policy-based defense. Standardization in the computer industry, according to Softklone, was desirable, but would be hampered by granting copyright protection to screen displays. The court rejected Softklone's standardization argument, but gave little supportive reasoning for its decision.[74] The reasoning given indicated that

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69. The Copyright Office implicitly recognizes the undesirability of allowing software creators to monopolize a position on the screen through copyright of the arrangement of text on a screen display. The Office has stated that it "does not register separately textual screen displays, reasoning that there is no authorship in ideas, or the format, layout or arrangement of text on the screen,. . ." *Copyright Office Notice on Computer Screen Registration*, 36 Pat. Trademark & Copyright J. (BNA) No. 884, at 152 (1988) [hereinafter *Copyright Office Notice*].

70. *Softklone*, 659 F. Supp. at 460.

71. *See Softklone*, 659 F. Supp. at 461; Baker v. Selden, 101 U.S. 99 (1879); 37 C.F.R. § 202.1(c) (1988).

72. *Softklone*, 659 F. Supp. at 461.

73. *Id.* at 462.

74. *Id.* As support for its rejection of Softklone's standardization argument, the court cited a portion of *Whelan* where the court stated that "we are not convinced that progress in computer technology or technique is qualitatively different from progress in other ar-

the court believed that those who urged standardization in the
computer industry did so solely to promote progress in computer tech-
nology by fostering the transferability of information among competi-
tors. However, there is a more compelling reason for standardizing the
computer industry. Computer users and the business community profit
greatly from the ability to transfer skills learned in operating one type
of computer software program to another. For example, if an office
worker has mastered the commands necessary to operate a Brand X
word processing program or spreadsheet, and then is transferred to a
different department, or is hired by a different company, and is re-
quired to use Brand Y software, the re-training and adjustment period
is shortened if the screen display and commands used by Brand X and
Brand Y are the same. Thus, for policy reasons such as increasing
worker productivity and ease of consumer use, standardization is a com-
pelling argument.[75] On the other hand, opponents of standardization
argue that software developers will not expend the effort to create new,
more useful screen displays if protection is not available.[76]

Reaching a conclusion as to whether standardization should take
place involves a balancing of interests. Is "progress in the arts and sci-
ences" best promoted by providing for transferability of computer skills
from one program to another, or by providing incentive for software de-
velopers to create new, well-developed screen displays? The *Softklone*
decision tips the scale in favor of providing incentive for the creation of
screen displays, and away from the transferability of computer skills.

4. Status Screen as Compilation

Having disposed of Softklone's defenses, the court turned its atten-
tion to determining what type of "work" the display screen was. Digital

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eas of science or the arts." Whelan Assocs. v. Jaslow Dental Laboratory, Inc., 797 F.2d
1222, 1238 (3d Cir. 1986). However, standardization was not put forth as a defense in
Whelan.

75. A software consultant has estimated that the cost of training a worker to obtain a
minimum level of proficiency of use of the spreadsheet "Lotus 1-2-3" (*Lotus 1-2-3*) is ap-
proximately $1,000 (including both direct costs, and lost time from other work while
training). Wiegner & Heins, *Can Las Vegas Sue Atlantic City?*, FORBES, Mar. 6, 1989, at
130, 132. Standardization could reduce the training costs by increasing the transferability
of computer skills. Reducing training costs and time would increase productivity. Also,
software manufacturers would have an incentive to keep the functionality of their prod-
uct ahead of competitors by periodically enhancing the quality of the software. Such an
incentive would exist because in a world where computer display screens are standard-
ized, the functionality of a program would dictate a user's choice of software, rather than
familiarity with a particular display screen. If a user wanted to switch to a different pro-
gram, he would not be forced to waste time learning a new interface. *See* Note, *A Thou-
sand Clones*, *supra* note 4, at 215.

76. Note, *A Thousand Clones*, *supra* note 4, at 214-16.

urged the court to find that the display screen was either a "compilation,"[77] or a "derivative work."[78] The court held that the status screen was designed and arranged prior to the development of the program code. Therefore, the status screen was not based upon a "preexisting" work, and was thus not a "derivative work."[79] The court did find, however, that the status screen was "assembled data," arranged in such a way as to constitute an original[80] work of authorship that fell within the definition of compilation, and that was copyrightable as such.[81] More specifically, the status screen was found to be a compilation, and thus copyrightable, "to the extent of its arrangment and design of parameter/command terms."[82]

5. Copying

Softklone admitted access to Digital's works.[83] As a result, the court was left solely with the task of determining whether "substantial similarity" existed between the two works. The court held that substantial similarity existed because "[t]he *Mirror* status screen captures the 'total concept and feel' of the *Crosstalk XVI* status screen."[84] Placement of the two status screens side-by-side helped the court determine that they were nearly identical, and that copying existed.

6. Remedy

The court permanently enjoined the defendants from engaging in, undertaking, aiding, abetting or facilitating the manufacture, distribution, lease, sale or licensing of any merchandise, goods or articles constituting infringements of the plaintiff's copyright in the *Crosstalk XVI* (version 3.6) "Main Menu" (status screen).[85] The injunction's effect on

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77. *See supra* note 12 (definition of "compilation").

78. *Softklone*, 659 F. Supp. at 463. A "derivative work" is defined as a work "based upon one or more preexisting works, such as a translation, musical arrangement, dramatization, fictionalization, motion picture version, sound recording, art reproduction, abridgement, condensation, or any other form in which a work may be recast, transformed or adapted." *Id.* In the court's opinion, the status screen was "essentially a 'literary work' and . . . copyrightable as such." *Id.* at 462.

79. *Id.* at 463.

80. The court found "originality" because the placement, arrangement and design of the parameter/command terms was "neither arbitrary nor predetermined but, rather, [was] the result of extensive original human authorship." *Id.*

81. *Id.* The court also noted that the Copyright Office had granted a Copyright Registration on the status screen as a "compilation." *Id.*

82. *Id.*

83. *Id.* at 464-65.

84. The *Softklone* court borrowed the "total concept and feel" test from Sid and Marty Krofft Television Prods., Inc. v. McDonald's Corp., 562 F.2d 1157, 1167 (9th Cir. 1977), and Roth Greeting Cards v. United Card Co., 429 F.2d 1106, 1110 (9th Cir. 1970).

85. *Softklone*, 659 F. Supp. at 465.

the parties and the market for telecommunications software is questionable, considering that four hours after the court handed down its decision, Softklone changed its status screen so that it no longer infringed Digital's, and both brands of software are still being sold.[86]

C. THE POSITION OF THE COPYRIGHT OFFICE

One problem with the *Softklone* decision is that, at present, the Copyright Office will not register a computer display screen separately; the office maintains that screen protection must come from the program copyright.[87] The conflicting positions have caused confusion,[88] but it is doubtful that a court, in the face of the express view of the Copyright Office, would follow the *Softklone* court's view that a program copyright does not protect the screen displays.

In June, 1988, the Copyright Office, in response to the confusion generated by the discrepancy between the Office's position and the *Softklone* opinion, issued a Notice on Computer Screen Registration.[89] The Notice was issued after a public hearing on the subject. The Office stated in the Notice that screen displays were not registered separately because "there is no authorship in ideas, or the format, layout or arrangement of text on the screen, and . . . any literary authorship in the screen display would presumably be covered by the underlying computer program—itself a literary work."[90] The Copyright Office also noted that the regulations specify that only one registration shall be issued per work.[91]

One reason given by the Office for its position was the need for a clear, consistent public record, and the undesirability of "piecemeal registration of parts of works."[92] While the proponents of separate screen

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86. *See* Wiegner & Heins, *supra* note 75, at 133.

87. At the time of the *Softklone* decision, however, the Copyright Office was granting separate registrations for display screens. *See id.*

88. Kenneth Wasch, of the Software Publishers Association, stated that "the court battles have created a level of uncertainty that has hurt the industry because people spend their time worrying about what's legal instead of creating new products." Hallisey, *Software Wars: The Look and Feel Battlefield*, PC RESOURCE, Mar. 1989, at 46.

89. *Copyright Office Notice, supra* note 69, at 152.

90. *Id.*

91. 37 C.F.R. § 202.3(b)(6) (1988). Computer program copyright claimants, when registering, "have the option to include or omit on the registration application any specific reference to a claim in the computer screen material. If the computer screen material is specifically claimed, however, then the deposit must include appropriate reproductions of the screen display." *Deposit Rules are Issued for Programs with Trade Secrets and Screen Displays*, 37 Pat. Trademark & Copyright J. (BNA) No. 925, at 594 (1989). For text-based applications programs, "printouts, photographs, or drawings" suffice as deposits, but a computer manual or VHS videotape do not. *Id.*

92. *Copyright Office Notice, supra* note 69, at 153.

registration asserted that the authorship of the program code is substantially different from the authorship of the screen display, the Copyright Office rebutted the argument, stating that the program code and screen display nonetheless are "integrally related and ordinarily form a single work."[93] A particularly compelling argument advanced by the Office was that it is common to "merge" several different types of authorship in a single work, such as a motion picture—a creation considered to be a single work even though it contains the authorship of writers, directors, editors, camera operators, etc.[94]

The Office explained that it sought only to create a clear, accurate public record, and could not precisely define the scope of protection of any work, including computer screen displays.[95] According to the Office, its position assists the public and the courts—the ultimate arbiters of the scope of protection.[96]

No court has yet been forced to reconcile the Copyright Office position with the *Softklone* decision, although the *CAMS* case, which involved screen displays registered prior to the Office's decision to grant a single registration, suggested a solution to the conflict.[97]

D. CAMS

1. Facts

On January 30, 1989, a third court, in *Manufacturers Technologies, Inc. v. CAMS, Inc.*,[98] addressed the copyrightability of text-based application program screen displays. MTI sued CAMS, alleging that CAMS' cost estimating program, "Quick Cost" (*Quick Cost*) infringed the screen display copyrights held by MTI for its cost estimating program, "Costimator" (*Costimator*). The defendants had been employed by MTI as salesmen, were trained in the use of MTI's program, had access to the display and user manuals, and possessed a *Costimator* demonstration program.[99] MTI had expended approximately 3,000 man-hours cre-

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93. *Id.* at 154.

94. *Id.*

95. *Id.*

96. One commentator has suggested that the Copyright Office position "places developers desiring to protect their screens at the mercy of courts that might follow the *Softklone* precedent." Note, *Copyright Protection for Computer Screen Displays*, 72 MINN. L. REV. 1123, 1143 (1988). However, *Softklone* involved a developer who had obtained a Copyright registration on the display screen. Because obtaining such a registration is no longer possible, software developers who have designed display screens subsequent to the Office's decision to no longer register display screens should be able to factually distinguish their cases from *Softklone*, thereby preventing a court from denying screen protection through the program copyright.

97. *See infra* notes 98-138 and accompanying text.

98. 706 F. Supp. 984 (D. Conn. 1989).

99. *Id.* at 988.

ating *Costimator*, but testimony indicated that CAMS spent just 1,500 man-hours creating *Quick Cost*.[100] MTI had obtained copyright registrations on the *Costimator* programs and some of the display screens, thereby placing the burden upon CAMS to prove the noncopyrightability of the display screens.[101]

Costimator sold for approximately $20,000; the defendants sold *Quick Cost* for between $1,000 and $2,000, while overstating their program's performance capabilities.[102] As a defense, CAMS alleged that the *Costimator* screen displays did not contain copyrightable subject matter.

2. The Opinion

Judge T.F. Gilroy Daly noted from the outset that "[w]hether a copyright in a computer program extends to its screen displays has been the subject of some confusion and disagreement."[103] After explaining that the copyright problem was created by the ability of two completely different computer programs to create identical, or nearly identical, screens, Judge Daly pointed out that only two courts, *Broderbund*[104] and *Softklone*,[105] had addressed the copyrightability of screen displays. Judge Daly separated the issue into two schools of thought. The first school favored broad protection for screen displays, and extended program copyright protection only to the "literal" elements of the program code.[106] The second school favored withholding copyright protection from user interfaces, such as screen displays or the sequence and structure of a program, because those elements are uncopyrightable functional elements or ideas.[107] Judge Daly also suggested that the Copyright Office's decision—that it will not register screen displays

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100. *Id.* at 988, 990.

101. M. Kramer Mfg. Co., Inc. v. Andrews, 783 F.2d 421, 434 (4th Cir. 1986).

102. *CAMS*, 706 F. Supp. at 990.

103. *Id.*

104. Judge Daly, like preceding courts and commentators, believed that the *Broderbund* court improperly interpreted *Whelan* when it held that *Whelan* stood for the proposition that a computer program protects the screen displays generated by that program. *Id.* at 992.

105. Judge Daly interpreted *Softklone* as holding that copyright protection in a computer program does not extend to its screen displays, but that a separate copyright registration in a screen display could be infringed by a defendant whose screen captured the "total concept and feel" of the plaintiff's. *Id.*

106. *Id.* at 993.

107. *CAMS*, 706 F. Supp. at 991 n.12 (citing Plains Cotton Coop, v. Goodpasture Computer Serv., 807 F.2d 1256 (5th Cir. 1987), *cert. denied*, 108 S. Ct. 80 (1987) (supporting the second "school of thought")). *Plains* held that the organizational similarity between plaintiff's and defendant's programs was not sufficient to constitute infringement because market factors played a significant role in determining the sequence and organization of the software. *Plains*, 807 F.2d at 1256.

separately—threatens the validity of the *Softklone* holding that a program copyright does not protect the screen displays generated by that program.[108]

3. Reconciling the Copyright Office Conflict

As its approach to the problem, the *CAMS* Court decided to "treat the single registration of the computer program as accomplishing two interrelated yet distinct registrations; [sic] one of the program itself and one of the screen displays or user interface of that program, to the extent that each contains copyrightable subject matter."[109] By creating the legal fiction of two separate registrations, the court hoped to facilitate the extraction of the copyrightable expression from each registration and avoid confusing a program's idea with that of a screen display idea.[110]

CAMS defended the infringement claim by asserting that the nature of the cost estimating screen displays was such that the available manners of expressing the screens' ideas were limited (merger), that the screens were uncopyrightable "forms," and that the screens lacked the requisite "originality" to be copyrightable.[111] Judge Daly held that the defendants' arguments must be applied to the screen displays[112] both as to the "flow and sequencing" of the screens, and to the screens individually.[113]

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108. *CAMS*, 706 F. Supp. at 992.

109. *Id.* at 993.

110. The court created the "legal fiction" of two separate registrations, which it believed recognized that:

> [A] computer program and its screen displays are, for copyright purposes, fundamentally distinct. The computer program and any authorship contained therein is designed to organize and direct the computer to efficiently perform a particular task when properly directed by the user. While the user interface is designed to communicate with the user in a way to facilitate the understanding and use of the program itself. *This approach conforms to the realities of Copyright Office registration procedures.*

Id. (emphasis added). The "legal fiction" approach does conform to Copyright Office registration procedures as far as it allows screen display protection to flow from a program copyright registration. However, why create more confusion through a "legal fiction?" If the court thought it important to conform to the Office registration procedures, it could have accomplished that result merely by applying the Office position that the program copyright covers any copyrightable authorship in the screen displays, without creating a "legal fiction."

111. *Id.*

112. The screen displays were registered as "compilations." *Id.*

113. *Id.* at 994.

4. "Flow and Sequencing" Copyright

Certain specific aspects of the cost estimating screens were found by the court to be dictated by functional considerations, and, therefore, uncopyrightable.[114] Thus, merger was available as a defense because a limited number of ways existed by which the defendants could express certain aspects of cost estimating.

Expert testimony was presented indicating that the entire "flow and sequencing" of the cost estimating screens was not solely functional.[115] Judge Daly was persuaded by this testimony, and, consequently, held that the "flow and sequencing" of the screens was, in fact, copyrightable.[116]

5. Copyright of "Common" Aspects of Individual Screens

In *CAMS*, MTI also argued that its screen display formatting style was protected. Specifically, MTI wanted protection for: (1) centered identification headings at the top of each screen display; (2) location of commands at the bottom of each screen ("bottom-line" programming); and (3) placement of the function to be selected in the middle of the screen.[117] The court correctly noted that "the placement of common screen components in certain specific locations is limited by several constraints."[118] The plaintiff's formatting style was held noncopyrightable because that style had been selected "from a very narrow range of possibilities."[119]

The court applied the same reasoning when it rejected plaintiff's claim that its "navigational" method—the use of certain keys for cursor movement or function selection—was copyright protected. Another reason given for rejecting the "navigational" claim was the fact that the

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114. *Id.*

115. Judge Daly found it dispositive that:

While there is evidence to show that some of the specific operations performed are functional in nature, there is none save defendants' expert testimony that the overall process and flow of these screens is driven solely by functional considerations. *However, that same expert candidly admitted that cost-estimating is part science and part art. Also, plaintiff adduced testimony from four different expert witnesses, all experienced in cost-estimating, that the process of creating a cost-estimate is unique to the individual manually performing the estimate or the computer program and screen displays assisting the same.*

Id. (emphasis added).

116. *Id.*

117. *Id.* at 994-95.

118. *Id.* at 995.

119. *Id.* (citing Morrissey v. Proctor & Gamble, Co., 379 F.2d 675, 678-79 (1st Cir. 1967); Affiliated Hosp. Prods., Inc. v. Merdel Game Mfg. Co., 513 F.2d 1183 (2d Cir. 1975)) (both "rules and instructions" cases).

type of computer used dictated the method of screen "navigation."[120] The only aspect common to all of the screen displays held copyrightable was the plaintiff's method of identifying the "operation or department" being used. The court found expression in the plaintiff's style because the characteristics of the identification method were not a "necessary incident" to the idea of apprising the user of his efforts in cost-estimating.[121]

6. Copyright of Specific Screens

Some of the individual screen displays were held copyrightable, but most of those displays were held not copyrightable because the court considered the expression to be a necessary incident to the idea.[122] A "job identification" screen was held copyrightable. The plaintiff's "re-dundancy" in the screen was evidence of expression that was *not* a "necessary incident" to the idea. The court also found the "job identifi-cation" screen sufficiently original to be copyrightable.[123] Finally, the court found that while the "job identification" screen was a blank form, it "conveyed information" as required by *Baker v. Selden*,[124] and thus was copyrightable. The screen was found to "convey information" be-cause it suggested that identifying a job involved many factors, and that "certain attributes of the part to be manufactured need to be considered when identifying a particular job, because those attributes will affect the derivation of an estimate."[125]

Two of MTI's screen displays were held copyrightable because CAMS did not offer testimony to rebut the presumption of copyright validity created by the screen registration.[126] Given the Copyright Of-fice position that program registration protects the screen, courts are now faced with determining whether program registrations create a

120. *CAMS*, 706 F. Supp. at 995. The "navigational" method was held uncopyrightable, regardless of whether the method involved use of certain keys or a menu.

121. *Id.* at 996.

122. A two-column alphabetical listing of departments was held to involve expression that was a necessary incident to the idea of the listing, and to lack originality. *Id.* at 996. A four-column display used for the input of information on a calculation screen was held not copyrightable because it involved "facts." Financial Info. v. Moody's Investor's Serv., 808 F.2d 204, 207 (2d Cir. 1986) *cert. denied*, 484 U.S. 820 (1987). Aspects of the calculation screen such as the columnar format and the use of both upper and lower case letters were held nonoriginal, and thus noncopyrightable. *CAMS*, 706 F. Supp. at 996. Also, a "listing of items for which data [was] supplied" was held noncopyrightable because the items were necessary incidents to the idea of cost-estimating. Finally, the court held several screens noncopyrightable merely because the plaintiff "offered no specific claim of protection or evidence." *Id.* at 997.

123. *Id.* at 996-97.

124. 101 U.S. 99 (1879).

125. *CAMS*, 706 F. Supp. at 997.

126. *Id.*

presumption of display screen copyright validity. Presumably, the Copyright Office will review screen displays when deciding whether to issue registrations for the underlying program. Consequently, if program registration is granted, the Office may be assumed to have determined that the screen displays were also copyrightable, and, therefore, entitled to the presumption of validity.

7. Copying

The court had little difficulty finding "access" when it was faced with considering whether CAMS had copied MTI's screen displays because of the CAMS principals' actions. The CAMS principals had: (1) been employed by MTI as salesmen; (2) seen the displays screens; and (3) possessed user manuals with copies of the screen displays. As for the question of "substantial similarity," the court used the 2nd Circuit "spontaneous response of the ordinary lay observer" test, but noted that, in a complex case such as the one before the court, expert testimony may be considered.[127] The six experts who testified for MTI unanimously concluded that the CAMS screen displays could not have been created independently of the MTI screen displays.[128] Besides "striking overall stylistic and format similarity," the experts found that both programs used terminology not common to the trade, both consistently used upper and lower case letters with respect to certain terms, "group segmentation" similarity,[129] navigational similarity,[130] and common "redundancies."[131] Thus, the "sequence and flow" of the CAMS screens displays was held substantially similar to that of the MTI screens.

Moreover, the CAMS method of expressing the user's status while conducting a cost-estimate was held substantially similar to the corresponding MTI method. Finally, as to individual screens, the court found one of the CAMS screens substantially similar to its corresponding MTI screen.[132] The CAMS court based its finding of copyright infringement primarily upon the defendant's copying of the overall "sequence and flow" of the plaintiff's program, rather than copying of individual

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127. *Id.* at 1000.

128. *Id.*

129. In both programs, the grouping of terms was not based on frequency of use of those terms, as is commonly done. *Id.*

130. Navigational similarity is the use of the same keys to move through the program. *Id.*

131. There is also evidence that the defendant's copying went so far as to duplicate the misspelled words in the plaintiff's screen displays. *See* Simon, *Software Owner Wins "Look and Feel" Victory*, Boston Globe, Mar. 14, 1989, Economy section, at 43.

132. The "job identification" screen was found substantially similar. *CAMS*, 706 F. Supp. at 1001.

screens.[133]

8. Remedy

Judge Daly found the defendant's infringement of the plaintiff's screen displays willful[134] and, therefore, granted a permanent injunction based upon a probability of continuing infringement.[135] The injunction was to be "on such terms as [the court] may deem reasonable to prevent or restrain infringement of [the] copyright."[136] Consequently, the court permanently enjoined the defendants from "engaging in or facilitating the manufacturing, advertising, selling, leasing, or licensing of the infringing . . . series of programs."[137] The permanent injunction will, in all likelihood, be more damaging to the defendants than the permanent injunction in *Softklone*, which caused minimal difficulty for the defendant.[138] But note, the "flow and sequencing" of the screen displays in *CAMS*, along with certain individual displays themselves, cannot be infringed. Thus, the *CAMS* defendants will have much more difficulty revising their screen displays to avoid infringement than the *Softklone* defendants, who were forced only to change some of the aesthetic characteristics of a single screen.

It is unclear, given the flexibility of computer technology, what effect the permanent injunction issued by the court will have upon the defendant. *CAMS* does not solve any of the problems that exist in "look and feel" copyright cases. In fact, the case will probably be cited by *both* plaintiffs and defendants in the future.

VI. PENDING CASES

Amid the uncertainty that has prevailed regarding the "look and feel" copyright of computer screen displays, several plaintiffs have entered the fray with new "look and feel" lawsuits. Apple is suing Microsoft and Hewlett Packard, claiming infringement of the "look and feel" of Apple's menu/window/mouse graphic interface. Ashton-Tate, creator of the "dBASE" (*dBASE*) database program is suing Foxbase Software, alleging both that Foxbase infringed the "look and feel" of *dBASE*, and that Ashton-Tate owns the computer language used by the *dBASE* program. Finally, Lotus Corp., maker of the spreadsheet "LO-

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133. *Id.* at 1002.

134. Judge Daly found that the defendants had "actual knowledge" of their infringing conduct, and thus the infringement was "willful." *CAMS*, 706 F. Supp. at 1002 (citing Fitzgerald Pub. Co. v. Baylor Pub. Co., 807 F.2d 1110, 1115 (2d Cir. 1986)).

135. *CAMS*, 706 F. Supp. at 1002.

136. 17 U.S.C. § 502(a) (1988).

137. *CAMS*, 706 F. Supp. at 1006.

138. *See supra* text accompanying notes 85-86 (discussion of *Softklone* remedy).

TUS 1-2-3" (*LOTUS 1-2-3*) is suing Mosaic Software and Paperback Software International, alleging infringement of the "look and feel" of *LOTUS 1-2-3*. The software giants, it seems, have gone "look and feel" crazy.

Some industry observers claim that the lawsuits are an attempt by software developers to stop, through the courts, the success of innovative, more efficient "clone" programs which are beginning to capture large shares of the software market. Basically, Apple, Lotus, and Ashton-Tate are being beaten where it counts—in the software market—so the three have decided to switch the battlefield from the market to the courts, where deeper pockets often prevail.[139]

The Apple and Lotus lawsuits have received substantial media attention, but by far the biggest newsmaker of the three has been Ashton-Tate, which has taken beatings from both the press and computer user groups.[140] Still, some of the negative characterizations of Ashton-Tate by the media could be a carryover from its general negative business image.[141] One computer columnist has even urged *dBASE* user groups to put pressure upon Ashton-Tate to drop its lawsuit (and, instead, use its legal funds for product innovation), and has also encouraged users to create a legal defense fund for Fox Software.[142] Media and computer user disagreement with the positions of the plaintiffs in the pending "look and feel" lawsuits does not, of course, necessarily mean that the plaintiffs do not have valid claims of infringement. It should be recognized that computer publications are written for computer users—not

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139. *See* Freedman, *Ashton-Tate Defends dBASE Turf*, PC WEEK, Nov. 28, 1988, at 1; O'Connor, *Software Giant Suing Competitors*, Chicago Tribune, Dec. 18, 1988, § 7, at 4, col. 1 (with regard to Ashton-Tate's lawsuit, the author stated that "what appears to be a business looking out for its rights" is actually "a bully trying to quash the competition and frighten the customer while diverting attention away from its inept efforts to improve its product.").

    Another author has observed that

    "the legal thorn patch through which it seems Ashton-Tate intends to drag Fox Software is the last and final resort to a problem that the company has not yet resolved: How to stay technically competitive while being bested by smarter companies that have built a better mousetrap; how to recover from its inability to improve the dBASE language while other, smaller companies are doing precisely that."

Ray, *Ashton-Tate's Lawsuit is Masking the Real Problem; Behind the Lines*, PC WEEK, Dec. 26, 1988, at 37.

140. Much of the negative press focuses on Ashton-Tate's claim to ownership of the copyright in the dBASE language. *See, e.g.*, Adams, *dBASE Users: Don't Take It!*, PC WORLD, Apr. 1989, at 268.

141. Analysts note that "Ashton-Tate hasn't yet proven its a company for tomorrow," and "Tate bashing is kind of a sport. Everyone has been doing it for so long they just don't know how to stop." Rebello, *Its Software Has Fans, if A-T Doesn't*, USA Today, Mar. 28, 1989, at 3B, col. 3.

142. Bunnell, *To Sue, Perchance to Win*, PC WORLD, Mar. 1989, at 43-44.

the software industry—and to a certain extent articles reflect the views of the readers, who want inexpensive software and interface standardization. Computer users probably could not care less whether the copyright laws are serving the purpose of promoting progress in the arts and sciences by balancing competing interests.

A major problem with Ashton-Tate's claim that it owns *dBASE* is evidence that the *dBASE* language was derived from "JPLDIS" (*JPLDIS*), a computer program developed at a Jet Propulsion Laboratory, and from *Vulcan*, a program based on *JPLDIS*.[143] Ashton-Tate could formulate an argument that the *dBASE* language was based on, and transformed from, a preexisting work, and, therefore, is a "derivative work."[144]

Apple faces a similar problem in its lawsuit. Apple claims copyright protection for its menu/window/mouse graphic interface, but there is evidence that Xerox developed that idea in the 1970s.[145] Apple, of course, is expected to claim that its *expression* of that idea is what merits copyright protection. The defendants will probably argue that "merger" exists because there is a limited number of ways that the idea of a menu/window/mouse graphic interface may be expressed. Considering the lack of success the defendants in *Broderbund*, *Softklone*, and *CAMS* had with the merger defense, the Apple defendants would be well advised to concentrate on other defenses.

One of the defendants in a pending case, Fox Software, has turned the tables and mounted its own offense in the form of several counterclaims. These counterclaims allege trade secret misappropriation, unfair competition, and Sherman Act violations by Ashton-Tate. Unlike the other defendants, Fox is in the fortunate position of having substantial evidence that Ashton-Tate encouraged Fox to copy the *dBASE* program and "look and feel" in order to establish *dBASE* as the industry standard.[146] Ashton-Tate has responded that it encouraged software companies to create applications for the *dBASE* software, but at no time did it encourage anyone to copy the entire "look and feel" of its *dBASE* software.[147]

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143. Fox Software, *Fox Software Open Letter to dBASE Language Community Regarding Fox Software and Ashton-Tate Litigation*, Business Wire, Dec. 13, 1988 (Business Wire is available on the NEXIS database).

144. 17 U.S.C. § 101 (1988).

145. Xerox employees devoted about thirty "work-years" to the development of the interface, and worked on the interface for two years before any software for operating the interface was developed. Smith, Irby, Kimball, Verplank & Harslem, *Designing the Star User Interface*, BYTE, Apr. 1982, at 242, 246.

146. *See* Fox Software, *supra* note 143.

147. David Cole, Ashton-Tate's CEO from 1982 to 1984 publicly stated that "[w]e actively encouraged developers to write applications in the dBASE language, and we encouraged people to use our file format, . . . [b]ut at no time did we encourage anyone to

As far as the pending Lotus case is concerned, many observers believe that the *CAMS* case will greatly help Lotus.[148] The plaintiff in the *CAMS* case used at least one expert suggested by Lotus and IBM.[149]

In the high stakes computer software world, it is no wonder that the major players of the game are scrambling to protect their positions by stopping competitors through the courts. The U.S. controls 70% of the worldwide software market, which amounted to about $50 billion in 1988.[150] Overseas sales of U.S. computer software amounted to about $11 billion in 1988.[151] If U.S. software developers are to remain competitive worldwide, innovative advances in software must continue. But with developers mired in an uncertain legal climate, technological advances may be stifled because of fear of overstepping the boundaries of copyright law.[152] For the moment, it appears that the courts, which have only recently been faced with copyright "look and feel" issues, will continue to balance the competing interests involved in this area. Unfortunately, the slow pace of the judicial system may allow the confusion to exist long enough to cause a reduction in the U.S. share of the world software market. For that reason, some observers have suggested that Congress take action.[153] Presently, no such action is foreseeable.

VII. CONCLUSION

As *Broderbund*, *Softklone*, and *CAMS* demonstrate, courts are willing to find that certain aspects of computer application program displays are "original works of authorship fixed in a tangible medium of expression" and, therefore, copyrightable under the federal Copyright Act. That willingness should not be allowed to erode into a general belief that all computer application program display screens are copyrightable. After all, computer programs are inherently functional. Granting

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appropriate or mimic the entire product." Freedman, *Fox Software Suit Charges Ashton-Tate Copyright is Invalid*, PC WEEK, Dec. 19, 1988, at 63, 64.

148. Henry B. Gutman, the lawyer who represents Lotus, stated that the *CAMS* case was "very helpful and one I am sure we will cite to the court." Simon, *supra* note 131, at 43.

149. *Id.*

150. O'Connor, *Patent Fever Sweeps Software: Developers Trying New Avenues to Protect Programs*, Chicago Tribune, Mar. 20, 1989, § 4, at 8, col. 1.

151. Wiegner & Heins, *supra* note 75, at 136.

152. Daniel Bricklin, co-creator of the spreadsheet *Visicalc*, who now operates a small software company, has stated that "I am not looking at certain products because I don't want to be accused later of having copied them." Simon, *supra* note 131, at 43.

153. Kathleen Wiegner & John Heins, the authors of the Forbes article, *Can Las Vegas Sue Atlantic City?*, have suggested that Congress create a separate software protection system, taking elements from both patent and copyright law. Their system would allow "look and feel" copying, but prohibit copying of program code. Also, the time of protection would be shortened to 10 years. *See* Wiegner & Heins, *supra* note 75, at 136.

a monopoly through copyright protection for the "best" way to accomplish a task should be avoided. The difficulty, of course, stems from determining when someone is seeking to copyright the "best" method. Such a determination will unavoidably be subjective. One way to avoid the creation of monopoly rights through the copyright of the "best" way to accomplish a task is to focus, as the courts have, on the "expression" contained in the computer display screens. However, future courts should hold that two aspects of computer application program screen displays are presumed incapable of containing "expression." This presumption, of course, would be rebuttable by plaintiffs, and would further require that a court hold that a program copyright registration creating a presumption of screen copyright validity extend to all aspects of the copyright *except* expression.

The first aspect is the sequencing and ordering of screen displays. More often than not, there exists a very limited number of ways that screens may be organized in order to efficiently perform a task. Absent evidence by a plaintiff that screen organization is unrelated to efficiency, courts should hold that screen sequencing and ordering is noncopyrightable. Otherwise, the limited number of ways to efficiently computerize a task would soon become monopolized, thereby stifling competition and incentive to create.

The second aspect is the positioning of text on the display screen. Again, there is often a very limited number of screen positions available for the efficient placement of text and commands. Plaintiffs who claim copyright in the position of text on a screen should be forced to come forward with evidence that text position is unrelated to efficient completion of the computerized task. Copyright protection for text positioning, just as for screen organization, is undesirable because of the potential monopoly effects.

Creating a presumption of noncopyrightability of screen organization and text position could lead to increased standardization in the computer industry. Computer users would become accustomed to the organization of screen displays and the screen positions of various text commands. Once users become accustomed to these general computer characteristics, users will enhance their ability to transfer computer skills to other brands of software. Furthermore, software manufacturers will have an incentive to periodically enhance the functionality of their software because they will not be able to rely upon user familiarity with their screen display for second-time sales.

Creating a rebuttable presumption of noncopyrightability of screen organization and text position provides a limited amount of standardization, and, at the same time, allows for protection when those aspects of a screen display indeed contain expression worthy of copyright protection.