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What You See is what You get...to Copy

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WHAT YOU SEE IS WHAT YOU GET . . . TO COPY

In the Ninth Federal Circuit, you may be prohibited from copying the audiovisual screen display generated by a copyrighted computer program. In the Third and Eleventh Federal Circuits, such copying may be lawful. An Eleventh Circuit District Court in *Digital Communications v. Softklone Distributing*[1] *("Softklone")* expressly rejected the conclusion reached by a district court in the Ninth Circuit.[2] The *Softklone* court, in agreement with a Third Circuit appellate court,[3] concluded that copyright protection of a computer program does not extend to its audiovisual screen display.[4]

The *Softklone* decision emphasizes the apparent anomaly whereby a copyright in an audiovisual screen display may protect its underlying computer program, but a copyright in a computer program will not protect its audiovisual screen display.[5]

The original plaintiff in the action, Microstuff, Incorporated ("Microstuff"), a Georgia corporation organized in 1979, developed and marketed the "Crosstalk" system in the early 1980's.[6] The Crosstalk computer program creates a computer data communications system which enables computers to communicate with one another by accessing and transferring data between themselves. Microstuff continued development on Crosstalk, and in 1983 began marketing an updated version, Crosstalk XVI (version 3.6).[7]

A key feature of the highly successful Crosstalk XVI system was its "status screen" screen display, also known as its "main menu." This display appears immediately following the "boot-up" or sign-on screen display and displays the system's parameter and command terms.[8]

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1. 659 F. Supp. 449 (N.D. Ga. 1987).

2. *Id. But see* Broderbund Software, Inc. v. Unison World, Inc., 648 F. Supp. 1127, 1133 (N.D. Cal. 1986) ("[C]opyright 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.").

3. *Softklone,* 659 F. Supp. at 455 ("The *Whelan* [Third Circuit] case did not stand for, as *Broderbund* [Ninth Circuit] believed it to, the proposition that screen displays are protected by the computer program's copyright from copying."). *See infra* notes 23-24 and accompanying text.

4. *Id.* at 456.

5. *Id.*

6. *Id.* at 452.

7. *Id.*

8. Copies of both Digital's Crosstalk XVI and Softklone's Mirror status screens are appended as Exhibits A and B, respectively. The status screen display appears immediately after

Alongside each term, the value of each parameter at which the program is operating is indicated, thereby constantly informing the operator of the operating status of the program. The user may select these values or the system will do so by default.

In October of 1985, Microstuff received copyright registrations for version 3.6 of the Crosstalk XVI computer program[9] and user manual.[10] In December of 1985, Microstuff applied for copyright registration of version 3.6 of the Crosstalk XVI "Main Menu" (status screen) display. The status screen was registered as a "compilation of program terms" by the United States Copyright Office.[11] On February 6, 1986, Microstuff received copyright registration for a second version of the status screen.[12] Microstuff then placed copyright notices in the computer program's source code, on the box containing the computer program diskette, in the "boot-up" or sign-on screen display appearing when the program begins, and on every page of the user manual.[13]

A defendant, ForeTec Development Corporation ("ForeTec"), a Florida corporation, obtained a commercially available copy of Crosstalk XVI and decided in the summer of 1985 to "clone" it. ForeTec's legal counsel advised ForeTec that the Crosstalk XVI program's source and object codes[14] and user manual were copyrightable, but the status screen was not.[15] ForeTec developed "Mirror" and marketed it in December of

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the initial "boot-up" or sign-on screen display. In the upper portion it contains an arrangement of parameter/command terms. These terms are grouped under various descriptive headings. Next to each term is a value, either numerical or textual, reflecting the value of the parameter at which the computer program is operating. Each value is either selected by default by the computer for the user, or by the user. To select a value, the user merely types the first two letters, which are capitalized and highlighted, of the command term they wish to access.

The lower portion of the status screen display, excluding the last line, is called the "window." It can display text selected by the user. By typing in the "HElp" command, the user can cause the "window" to display all the parameter/command terms. The terms are listed in four alphabetical groupings. The first group appears upon typing "HElp," and by pressing the "enter" key on the keyboard the remaining groups will appear.

The last line in the display is the "command" line. That is where the user enters a "command" or instruction to the computer to change any of the values at which it operates. Entering a command to change a value alters the corresponding value in the upper portion of the status screen display alongside its parameter/command term. *Id.* at 452-53.

9. *Softklone*, 659 F. Supp. at 453 (copyright registration number TX-1-657-208).

10. *Id.* (copyright registration number TX-1-657-201).

11. *Id.* (copyright registration number TX-1-719-301).

12. *Id.* (copyright registration number TX-1-735-829).

13. *Id.*

14. Source code is the "language" in which a computer programmer writes the commands telling a computer which operations or calculations to perform. Object code is the "language" into which the source code is translated for use by the computer.

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

1985 through its subsidiary, defendant Softklone Distributing Corporation. With a few minor differences, Mirror performed just as Crosstalk XVI and used a status screen which Microstuff claimed infringed upon its copyright. Subsequently, Microstuff was purchased by Digital Communications Associates, Incorporated ("Digital").[16]

PROTECTION OF DIGITAL'S DISPLAY BY COMPUTER
PROGRAM COPYRIGHT

Digital claimed that Softklone's copying of Digital's Crosstalk XVI (version 3.6) "Main Menu" (status screen) display infringed upon Digital's copyright in the underlying computer program.[17] The court noted computer programs are classified as "literary works" and "works of authorship" subject to copyright protection,[18] and copyright protection extends to both a program's source code and object code.[19] Further, a

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16. *Id.* In August of 1985 ForeTec created the defendant Softklone Distributing Corporation ("Softklone"), a Florida corporation, as a wholly owned subsidiary. ForeTec created Softklone for marketing and distributing cloned computer programs like Mirror. In October of 1986, Digital Communications Associates, Incorporated ("Digital"), a Georgia corporation, purchased Microstuff and was substituted as the plaintiff in the action. *Id.*

17. *Id.* at 454.

18. *Id. See also* Whelan Assocs. v. Jaslow Dental Laboratory, 797 F.2d 1222, 1234 (3d Cir. 1986) ("[C]omputer programs are classified as literary works for the purposes of copyright."), *cert. denied,* __ U.S. __, 107 S. Ct. 877 (1987). Statutory authority can be found in 17 U.S.C. §§ 101, 102(a)(1),(6) (1977). Title 17 U.S.C. § 102(a) provides in pertinent part as follows:

> Copyright protection subsists, in accordance with this title, in original works of authorship fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device. Works of authorship include the following categories:
> (1) literary works;
> . . . .
> (6) . . . and other audiovisual works.

Id.

Title 17 U.S.C. § 101 defines the terms "audiovisual works" and "literary works" as follows:

> "Audiovisual works" are works that consist of a series of related images which are intrinsically intended to be shown by the use of machines or devices such as projectors, viewers, or electronic equipment, together with accompanying sounds, if any, regardless of the nature of the material objects, such as films or tapes, in which the works are embodied.
> . . . .
> "Literary works" are works, other than audiovisual works, expressed in words, numbers, or other verbal or numerical symbols or indicia, regardless of the nature of the material objects, such as books, periodicals, manuscripts, phonorecords, film, tapes, disks, or cards, in which they are embodied.

Id.

19. *Softklone,* 659 F. Supp. at 454. *See also Whelan,* 797 F.2d at 1233-34 ("[C]opyright protection extends to a program's source and object codes."); Apple Computer, Inc. v. Frank-

copyright in a computer program extends protection beyond the program's source and object codes to its "structure, sequence, and organization."[20]

The court observed that a computer program is a "copy" of its screen display since a fixed computer program always produces that same display.[21] However, a screen display is not a direct "copy" of the substantive content of the underlying computer program creating it since a fixed display may be the result of many different programs.[22]

The court held, therefore, that copyright protection of a computer program does not extend to its audiovisual screen display, and copying a program's audiovisual screen display creates no infringement "without evidence of copying of the program's source code, object code, sequence, organization or structure."[23] The court expressly rejected an opposite conclusion reached by a Ninth Circuit District Court in *Broderbund Software, Inc. v. Unison World, Inc.*, which stated that copyright protection of a computer program does extend to its audiovisual display.[24]

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lin Computer Corp., 714 F.2d 1240, 1249 (3d Cir. 1983) ("[A] computer program, whether in object code or source code, . . . is protected from unauthorized copying . . . ."), *cert. dismissed*, 464 U.S. 1033 (1984).

20. *Softklone*, 659 F. Supp. at 455 (citing *Whelan*, 797 F.2d at 1248 ("[C]opyright protection of computer programs may extend beyond the programs' literal code to their structure, sequence, and organization . . . .")).

21. *Id.* at 456. *See also* M. Kramer Mfg. Co. v. Andrews, 783 F.2d 421, 442 (4th Cir. 1986) ("The [computer] program . . . is, by definition a 'copy' [of the audiovisual display].").
Statutory authority can be found in 17 U.S.C. § 101 (1977). Title 17 U.S.C. § 101 defines "copies" and "fixed" for purposes of copyright as follows:

> "Copies" are material objects, other than phonorecords, in which a work is fixed by any method now known or later developed, and from which the work can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device. The term "copies" includes the material object, other than a phonorecord, in which the work is first fixed.
> 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. A work consisting of sounds, images, or both, that are being transmitted, is "fixed" for purposes of this title if a fixation of the work is being made simultaneously with its transmission.

Id.

22. *Softklone*, 659 F. Supp. at 455-56. *See also* Stern Elecs., Inc. v. Kaufman, 669 F.2d 852, 855 (2d Cir. 1982) ("[M]any different computer programs can produce the same 'results,' whether those results are an analysis of financial records or a sequence of images and sounds."); Midway Mfg. Co. v. Strohon, 564 F. Supp. 741, 749 (N.D. Ill. 1983) ("[I]t is quite possible to design a game that would infringe Midway's audiovisual copyright but would use an entirely different computer program.").

23. *Softklone*, 659 F. Supp. at 456.

24. *Id.* at 455 (citing 648 F. Supp. 1127 (N.D. Cal. 1986)). The *Softklone* court believed that "[t]he *Broderbund* court based its conclusion on what [the *Softklone* court believed] to be an overexpansive and erroneous reading of *Whelan*. The Third Circuit in *Whelan* dealt only

PROTECTION OF DIGITAL'S DISPLAY BY DISPLAY COPYRIGHT

Digital also contended Softklone's copying of the Crosstalk XVI "Main Menu" display infringed upon Digital's valid copyright in that display.[25] Since Digital's certificate of copyright registration was prima facie evidence of a valid copyright in the display, the burden was therefore on Softklone to present evidence questioning the copyrightability of that display and the sufficiency of its copyright notice.[26]

Softklone, relying upon *Baker v. Selden,*[27] contended that the Crosstalk "Main Menu" status screen display was not copyrightable since it was a necessary expression of the underlying idea, the computer program. Therefore the expression merged into the idea,[28] and since a copyright protects expressions of ideas only, not the ideas themselves,[29] it was not protected.

The court examined the "merger rule" which provides that an idea which has only one "necessary" form of expression merges with the expression and is not copyrightable.[30] The court found the policy behind the "merger rule" to be sound since the purpose of copyright law is to "balance between protection (incentive) and dissemination of information [use], to promote learning, culture, and development."[31]

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with the evidentiary use of the copying of screen displays for the purpose of establishing copying of the underlying computer program." *Id. See infra* notes 75-77 and accompanying text.

25. *Softklone,* 659 F. Supp. at 454.

26. *Id.* at 456.

27. 101 U.S. 99 (1879). The Court denied copyright protection for original bookkeeping forms used in a book explaining a new method of bookkeeping. The Court held that the forms were "necessary incidents" to the bookkeeping idea since the bookkeeping method could not be used without them. Hence, the forms, as an expression, merged with the bookkeeping idea and were therefore not copyrightable. *Id.*

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

29. *Id.* at 457. *See also Whelan,* 797 F.2d at 1234 ("It is axiomatic that copyright does not protect ideas, but only expressions of ideas."), *cert. denied,* ___ U.S. ___, 107 S. Ct. 877 (1987); Mazer v. Stein, 347 U.S. 201, 217 (1954) ("[P]rotection is given only to the expression of the idea — not the idea itself."). Statutory authority can be found in 17 U.S.C. § 102(b) (1977) which states: "In no case does copyright protection for an original work of authorship extend to any idea . . . regardless of the form in which it is described, explained, illustrated, or embodied in such work."

30. *Softklone,* 659 F. Supp. at 457. *See also* M. Kramer Mfg. Co. v. Andrews, 783 F.2d 421, 436 (4th Cir. 1986) ("If there is only one way to express the idea, 'idea' and 'expression' merge and there is no copyrightable material."); Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240, 1253 (3d Cir. 1983) ("If other programs can be written or created which perform the same function . . . then that program is an expression of the idea and hence copyrightable."), *cert. dismissed,* 464 U.S. 1033 (1984).

31. *Softklone,* 659 F. Supp. at 458. *See also Whelan,* 797 F.2d at 1235 n.27:

[The courts] 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 inge-

To determine whether an expression and an idea have "merged," a court must define the underlying idea behind the copyrighted work and then determine whether alternative means of expressing the idea exist.[32] The *Softklone* court found the "idea" to be the process or manner by which the status screen display operated or functioned, and the "expression" to be the method by which that "idea" was communicated or conveyed to the user.[33] Certain aspects of the display were found to be unrelated to the underlying computer program's operation and were therefore copyrightable "expression."[34]

Softklone also contended the status screen display did not merely "explain" the operation of the underlying computer program, but was "used" as part of its operation.[35] The court, however, held that the intended use, or an industry's use, of an article eligible for copyright does not bar or invalidate its copyright registration.[36] A work which "explains" may also be "used," that is, serve some function other than as a mere explanation. That part of the work which "explains" is copyrightable if it is not necessary to the underlying idea.[37]

Softklone maintained that the status screen display was like the "input format cards" involved in *Synercom Technology, Inc. v. University Computing Co.*[38] Like the input format cards, the status screen display had titles, shaded areas, and specific columns in which to place certain

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nuity and labour [sic]; the other, that the world may not be deprived of improvements, nor the progress of the arts be retarded.

Id.

    See also Apple, 714 F.2d at 1253 ("[A court must consider] the preservation of the balance between competition and protection reflected in the . . . copyright laws.").

    32. *Softklone,* 659 F. Supp. at 458.

    33. *Id.*

    34. *Id.* at 459. The arrangement of the parameter/command terms were not related to how the computer operated. Also, the capitalizing and highlighting of the first two letters of the parameter/command terms displayed on the status screen were not necessary to the functioning of the status screen. *Id.*

    35. *Id.*

    36. *Id. See also* Mazer v. Stein, 347 U.S. 201, 218 (1954) ("We find nothing in the copyright statute to support the argument that the intended use or use in industry of an article eligible for copyright bars or invalidates its registration."). For example, the use of china statuettes, copyrighted as works of art, as bases for electric lamps does not invalidate the copyright. *Id.*

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

    38. 462 F. Supp. 1003 (N.D. Tex. 1978). The plaintiff had developed a computer program for performing structural analyses on buildings. The program operated on data entered by the user. The data had to be entered in a specific sequence. "Input format cards," with titles and shaded areas, were published and copyrighted by the plaintiff to assist the user in entering the data in the correct sequence. The court held that since the defendant had merely copied the idea, the sequence of the data entries, and not the format cards, the copyright was not infringed. *Id.* at 1013-14.

data.[39] Softklone claimed that the display, like the input format cards, was a necessary expression of the idea which was the particular sequence of data to be entered by the user of the underlying computer program; therefore, the expression (display) merged with the idea and was not copyrightable.[40]

The court disagreed, however, pointing out that the *Synercom* defendants had copied merely the sequence of data input which was relevant to the operation of the underlying computer program (the "idea"); they did not copy the arrangement and appearance of the format cards (the "expression"). In contrast, Softklone did copy the arrangement and appearance of Digital's Crosstalk XVI "Main Menu" display.[41]

The court further decided that Digital's status screen display arrangement, unlike the *Synercom* input format cards, involved "considerable stylistic creativity and authorship above and beyond the ideas embodied in the status screen."[42] Moreover, since many alternative arrangements were possible, the display was not a necessary expression of the underlying idea, the computer program. Hence, Digital's mode of expression of the status screen display did not "merge" with the idea and was therefore copyrightable.[43]

Softklone also contended that Digital's display was not copyrightable because it was a "blank form," conveying no information itself but merely recording the data as entered by the user.[44] "[B]lank forms which do not convey information or contain original pictorial expression are not copyrightable."[45]

The court noted that the "litmus [test] seems to be whether the material proffered for copyright undertakes to express."[46] The determina-

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

40. *Id.*

41. *Id.* at 460.

42. *Id.*

43. *Id.*

44. *Id.* at 461. *See also* 37 C.F.R. § 202.1(c) (1986) which provides in pertinent part as follows:

> The following are examples of works not subject to copyright and applications for registration of such works cannot be entertained:
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> . . . .
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> (c) Blank forms, such as time cards, graph paper, account books, diaries, bank checks, scorecards, address books, report forms, order forms, and the like, which are designed for recording information and do not in themselves convey information.

Id.

45. *Softklone,* 659 F. Supp. at 461 (quoting John H. Harland Co. v. Clarke Checks, Inc., 711 F.2d 966, 971 (11th Cir. 1983)).

46. *Id.* (quoting Synercom Technology, Inc. v. Univ. Computing Co., 462 F. Supp. 1003, 1011 (N.D. Tex. 1978)).

tion as to whether a work conveys information and is therefore copyrightable must be made on a case by case basis.[47] The court held that the status screen display, even if found to be a "form," clearly expressed and conveyed information; hence, it was copyrightable.[48]

The court further held that Digital's status screen display was copyrightable as a "literary work" under the 1976 Copyright Act ("the Act").[49] Moreover, Digital's display was a "compilation" of parameter/command terms since it was an " 'assembling' of 'data' or information 'arranged' in such a way as to constitute 'an original work of authorship.' "[50] Therefore, it was copyrightable under section 103 of the Act.[51] Hence, since the display's compliance with section 102 of the Act was not challenged by Softklone, and it was already held not to be a necessary expression of an idea, it was "copyrightable to the extent of its arrangement and design of parameter/command terms."[52]

ADEQUACY OF DIGITAL'S NOTICE OF COPYRIGHT

Softklone alternatively claimed that even if Digital's display was copyrightable subject matter, Digital forfeited any copyright protection for its status screen display because Digital failed to provide adequate copyright notice on the display.[53] The court disagreed, holding that the copyright notices on the "boot-up" or sign-on screen display and pages of the user manual illustrating the display gave the requisite "reasonable notice of the claim of copyright" and constituted "a reasonable effort . . . to add notice" to the status screen display.[54]

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47. *Softklone,* 659 F. Supp. at 461.
48. *Id.* at 462.
49. *Id. See* 17 U.S.C. §§ 101-02 (1977). *See supra* note 18.
50. *Softklone,* 659 F. Supp. at 463.
51. *Id. See* 17 U.S.C. §§ 101, 103(a) (1977). *See infra* note 71.
52. *Softklone,* 659 F. Supp. at 463.
53. *Id.*
54. *Id.* at 464. *See* 17 U.S.C. §§ 401(c), 405(a)(2) (1977). Title 17 U.S.C. § 401(c) provides as follows:

> Position of Notice.—The notice [of copyright] shall be affixed to the copies in such manner and location as to give reasonable notice of the claim of copyright. The Register of Copyrights shall prescribe by regulation, as examples, specific methods of affixation and positions of the notice on various types of works that will satisfy this requirement, but these specifications shall not be considered exhaustive.

Id. Title 17 U.S.C. § 405(a) provides in pertinent part as follows:

> Effect of Omission [of Notice] on Copyright.—The omission of the copyright notice prescribed by sections 401 through 403 from copies or phonorecords publicly distributed by authority of the copyright owner does not invalidate the copyright in a work if—
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> . . . .
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> (2) registration for the work has been made before or is made within five years after the publication without notice, and a reasonable effort is made to add notice to

DIGITAL'S COPYRIGHTED WORK WAS COPIED BY SOFTKLONE

The court concluded that Softklone had copied Digital's copyrighted status screen display; Softklone had acknowledged having access to Digital's Crosstalk XVI (version 3.6) prior to developing its Mirror program and display;[55] and that Softklone's Mirror status screen display was substantially similar to Digital's Crosstalk XVI (version 3.6) "Main Menu" (status screen) display, capturing the "total concept and feel" of Digital's display.[56]

Hence, since Digital owned a valid copyright protecting its status screen display which Softklone had copied, thereby infringing Digital's copyright, the court permanently enjoined Softklone from distributing anything constituting an infringement of Digital's copyright in its Crosstalk XVI (version 3.6) "Main Menu" (status screen) display.[57]

COPYRIGHT PROTECTION OF COMPUTER PROGRAMS AND DISPLAYS

A computer program's audiovisual display may be protected by a copyright. Section 102 of the Act provides protection for "audiovisual works" and "literary works."[58] An audiovisual display for a computer-driven video game for example, is copyrightable as an original "audiovisual work."[59] The visual and aural features of a video game's display can be sufficiently "original" within the meaning of section 102(a) of Title 17 of the United States Code;[60] and the computer's memory devices satisfy the statutory requirement under section 102(a) of a "copy" in which the display's audiovisual work is "fixed."[61]

A computer program is also copyrightable. Protection under a copyright in a program extends to both the program's source code and

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all copies or phonorecords that are distributed to the public in the United States after the omission has been discovered.

Id.

55. *Softklone,* 659 F. Supp. at 464-65.

56. *Id.* at 465. *See also* Sid & Marty Krofft Television Prods., Inc. v. McDonald's Corp., 562 F.2d 1157, 1167 (9th Cir. 1977) ("[The defendants] captured the 'total concept and feel' of the [plaintiff's work].").

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

58. 17 U.S.C. §§ 101, 102(a)(1) (1977). *See supra* note 18.

59. Stern Elecs., Inc. v. Kaufman, 669 F.2d 852, 855-56 (2d Cir. 1982) ("The display satisfies the statutory definition of an original 'audiovisual work,' and the memory devices of the game satisfy the statutory requirement of a 'copy' in which the work is 'fixed.' " Hence, it is appropriate subject matter for copyright protection.). *See also* Williams Elecs., Inc. v. Artic Int'l., 685 F.2d 870, 874-75 (3d Cir. 1982); Midway Mfg. Co. v. Strohon, 564 F. Supp. 741, 746 (N.D. Ill. 1983).

60. *Stern,* 669 F.2d at 855-56.

61. *Williams,* 685 F.2d at 874. *See* 17 U.S.C. §§ 101, 102(a) (*supra* notes 21,18, respectively).

object code.[62] But, copyright protection may extend even beyond the literal elements (the source and object codes) of the program.[63]

The Act extends copyright protection to "literary works."[64] Case law has extended copyright protection beyond the literal elements of the work. Copyrights of some literary works can be infringed even when there is no substantial similarity between the works' literal elements. For example, copying of the plot or plot devices in a play or book can violate a copyright.[65] Computer programs are classified as literary works for the purposes of copyright.[66] Hence, by analogy, the copyright in a computer program may be infringed even with no copying of the program's literal elements, the source and/or object codes.[67]

The purpose behind United States copyright law is to provide protection, and thus incentive for original creations, while also providing for dissemination of information to promote learning, culture, and development.[68] The most expensive and difficult aspect of creating a computer program is the development of its structure and logic,[69] that is, planning and establishing the sequence(s) of functions and operations the program must perform. Therefore, extending copyright protection beyond a program's literal elements (the codes) to its structure and organization provides incentive for its creation by protecting that most valuable aspect.[70] Moreover, the Act indicates that Congress knew "that the sequence and order could be parts of the expression, not the idea, of a work;"[71] there-

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62. *Whelan,* 797 F.2d at 1233-34, *cert. denied,* ___ U.S. ___, 107 S. Ct. 877 (1987). *See also* Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240, 1249 (3d Cir. 1983) ("[A] computer program, whether in object code or source code, . . . is protected from unauthorized copying . . . ."), *cert. dismissed,* 464 U.S. 1033 (1984).

63. *Whelan,* 797 F.2d at 1248.

64. 17 U.S.C. § 102(a)(1) (1977). *See supra* note 18.

65. *Whelan,* 797 F.2d at 1234.

66. *Id.*

67. *Id.* at 1234 n.26.

68. *Whelan,* 797 F.2d at 1235, *cert. denied,* ___ U.S. ___, 107 S. Ct. 877 (1987); *See also* Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240, 1253 (3d Cir. 1983) (". . . the preservation of the balance between competition and protection reflected in the . . . copyright laws."), *cert. dismissed,* 464 U.S. 1033 (1984).

69. *Whelan,* 797 F.2d at 1231, 1237.

70. *Id.* at 1237.

71. *Id.* at 1239.
   Although the [Copyright Act] does not use the terms "sequence," "order" or "structure," it is clear from the definition of compilations and derivative works, and the protection afforded them, that Congress was aware of the fact that the sequencing and ordering of materials could be copyrighted, *i.e.,* that the sequence and order could be parts of the expression, not the idea, of a work.

Id.
   See 17 U.S.C. §§ 101, 103(a) (1977). Title 17 U.S.C. § 103(a) provides that "[t]he subject matter of copyright as specified by section 102 [*see supra* note 18] includes compilations and

fore, Congress intended the structure and organization of a literary work to be part of the expression protectible by copyright.[72] Hence, extending copyright protection in a computer program beyond its literal elements to its structure and organization is: analogous to such an extension of protection in a play or book; consistent with the purpose behind copyright law; and consistent with the intent of Congress.

However, to be copyrightable, the computer program's sequence and form must be separable from its underlying idea; they must not be the necessary form of expression of the idea. If they are not separable, the expression (the sequence and form) merges with the idea[73] and is not

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derivative works . . . ." Title 17 U.S.C. § 101 defines "compilation" and "derivative work" as follows:

> A "compilation" is a work formed by the collection and assembling of preexisting materials or of data that are selected, coordinated, or arranged in such a way that the resulting work as a whole constitutes an original work of authorship. The term "compilation" includes collective works.
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> . . . .
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> A "derivative work" is a work based upon one or more preexisting works, such as a translation, musical arrangement, dramatization, fictionalization, motion picture version, sound recording, art reproduction, abridgment, condensation, or any other form in which a work may be recast, transformed, or adapted. A work consisting of editorial revisions, annotations, elaborations, or other modifications which, as a whole, represent an original work of authorship, is a "derivative work".

Id.

72. *Whelan,* 797 F.2d at 1237. An illustration of the difference between an "idea" and its "expression" is found in Synercom Technology, Inc. v. Univ. Computing Co., 462 F. Supp. 1003, 1013 (N.D. Tex. 1978):

> A hypothetical, oversimplified, may serve to illuminate the idea versus expression controversy. The familiar "figure-H" pattern of an automobile stick is chosen arbitrarily by an auto manufacturer. Several different patterns may be imagined, some more convenient for the driver or easier to manufacture than others, but all representing possible configurations. The pattern chosen is arbitrary, but once chosen, it is the only pattern which will work in a particular model. The pattern (analogous to the computer "format") may be expressed in several different ways: by a prose description in a driver's manual, through a diagram, photograph, or driver training film, or otherwise. Each of these expressions may presumably be protected through copyright. But the copyright protects copying of the particular expressions of the pattern, and does not prohibit another manufacturer from marketing a car using the same pattern. Use of the same pattern might be socially desirable, as it would reduce the retraining of drivers. Likewise, the second manufacturer is free to use its own prose descriptions, photographs, diagrams, or the like, so long as these materials take the form of original expressions of the copied idea (however similar they may be to the first manufacturer's materials) rather than copies of the expressions themselves. Admittedly, there are many more possible choices of computer formats, and the decision among them more arbitrary, but this does not detract from the force of the analogy.

Id.

73. Baker v. Selden, 101 U.S. 99 (1879).

> [W]here the art it 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; not given for the purpose of publication in other works explanatory of the art, but for the purpose of practical application.

copyrightable, since copyright does not protect ideas, only expressions of ideas.[74]

In the Ninth Circuit, however, copyright protection in computer programs has been extended even further. The court in *Broderbund Software, Inc. v. Unison World, Inc.*[75] extended protection from a copyright in a computer program, not only to the overall structure of the program, but to its audiovisual display as well.[76] This would have the apparent effect of rendering a separate copyright in the display unnecessary. The *Broderbund* court appeared to interpret *Whelan Associates v. Jaslow Dental Laboratory,*[77] a Third Circuit decision, broadly, while offering no supporting rationale.

In *Whelan,* the plaintiff, in the business of developing and marketing custom computer programs, developed a program for the defendants who were manufacturers of dental devices. The plaintiff and defendant shared in the profits from marketing the program to other dental laboratories. Some time later, the defendants adapted the program for use on the smaller personal computers which had become increasingly popular among dental laboratories. The defendants unilaterally terminated their association with the plaintiff and marketed the adapted program themselves. The plaintiffs successfully alleged that due to "overall structural similarities" between the two programs, the defendants were infringing upon the plaintiff's copyright in the original program.[78]

The *Whelan* court agreed, holding that a copyright in a computer program protected the overall structure and organization of the program, not just the source and object codes. The overall structure, sequence, and organization of the program could be distinguished from the underlying idea, and therefore it was a copyrightable expression.[79]

In *Broderbund* the facts were similar, but the *Broderbund* court ex-

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Id. at 103.

74. *Whelan,* 797 F.2d at 1234, *cert. denied,* __ U.S. __, 107 S. Ct. 877 (1987). *See also* Mazer v. Stein, 347 U.S. 201, 217 (1954) ("[P]rotection is given only to the expression of the idea — not the idea itself."); 17 U.S.C. § 102(b) (1977) ("In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work.").

75. 648 F. Supp. 1127 (N.D. Cal. 1986).

76. *Id.* at 1133.

77. 797 F.2d at 1248, *cert. denied,* __ U.S. __, 107 S. Ct. 877 (1987).

78. *Id.* at 1228. Most of the programs' file structures and screen outputs were virtually identical; and five particularly important sub-routines within both programs performed almost identically in both programs. *Id.*

79. *Whelan,* 797 F.2d at 1240, 1248 (3d Cir. 1986), *cert. denied,* __ U.S. __, 107 S. Ct. 877 (1987).

tended the program's copyright protection even further than did the *Whelan* court. The defendant was marketing a computer program which, similar to that of the plaintiffs, enabled its user to create customized greeting cards. The plaintiffs successfully alleged that the overall appearance, structure, and sequence of the audiovisual displays in the defendant's program infringed on their copyrighted program.[80]

The *Broderbund* court agreed, stating that "*Whelan* [stood] for the proposition that copyright protection is not limited to the literal aspects of a computer program, but rather that it extends to the overall structure of a program, including its audiovisual displays."[81] The court gave no rationale for including the display within the copyright protection of the program.

POSSIBLE ARGUMENT FOR EXTENDED PROTECTION UNDER *BRODERBUND*

A possible argument for the conclusion reached in *Broderbund* may be found in an expansive reading of *Whelan*. A supporting rationale could read as follows:

The purpose of United States copyright law is to provide a "balance between protection (incentive) and dissemination of information for promoting learning, culture and development."[82] The most expensive and difficult part of creating a computer program is the development of its structure.[83] "[T]he 'look and feel' of a computer software product often involves much more creativity and often is of greater commercial value than the program code which implements the product."[84] Therefore, protection of the structure of the computer program by the program's copyright provides incentive for its creation.[85] Moreover, extension of the computer program's copyright protection to its structure fulfills the intent of Congress as expressed in the Copyright Act of 1976.[86]

The "look and feel" of a computer program includes its audiovisual display, since that is how the user interacts with, or uses, the program. To the user, the computer program's audiovisual display is the expres-

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80. Broderbund Software, Inc. v. Unison World, Inc., 648 F. Supp. 1127, 1130 (N.D. Cal. 1986).

81. *Id.* at 1133.

82. *Whelan*, 797 F.2d at 1235. *See also* Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240, 1253 (3d Cir. 1983), *cert. dismissed,* 464 U.S. 1033 (1984). *See supra* note 68 and accompanying text.

83. *Whelan,* 797 F.2d at 1231.

84. *Id.*

85. *Id.* at 1237.

86. *Id.* at 1239. *See* 17 U.S.C. § 103 (1977).

sion of the underlying idea (i.e., the function performed by the program). Further, the display is typically designed and arranged while the overall structure and organization of the program is being designed, prior to the writing of the program's source code.[87] Therefore, the display should be protected as part of the program's overall structure, provided a separable "idea" exists so that the display is not a necessary expression causing it to "merge"[88] with the idea.

The above rationale has several problems, however. First, although Congress' intent behind the Act was to provide incentive through protection, that alone cannot justify extending protection under a computer program's copyright to anything and everything associated with that program. Though the display may be designed concurrently with the overall structure and organization of the program, it cannot really be considered as part of that structure. For example, the display, just as a series of audio tones or textual printouts, is merely the result of the operation of the program. Besides, if Congress had intended for a copyright's protection to extend that far, Congress would probably have expressly said so. Congress has provided in specific terms for copyright protection through the Act and its language should be construed narrowly.

Second, this rationale makes no distinction for the situation where the display is a "blank form" which merely records information (entered by the user of the program) but conveys no information itself. Extending copyright protection to blank forms is expressly prohibited by section 202.1(c) of Title 37 of the Code of Federal Regulations.[89]

Finally, including an audiovisual display within the copyright protection in a computer program is prevented by the "copy anomaly" as discussed by the court in *Softklone*.[90] The Act requires that the subject matter of a copyright be "fixed in [a] tangible medium of expression,"[91] and to be "fixed" it must be embodied in a "copy."[92] While the computer program is a copy of its display,[93] the display is not a copy of its program.[94] Therefore, since the display is not "fixed" in the program, it

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87. *See, e.g., Softklone,* 659 F. Supp. at 463.

88. M. Kramer Mfg. Co. v. Andrews, 783 F.2d 421, 436 (4th Cir. 1986). *See also* Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240, 1253 (3d Cir. 1983), *cert. dismissed,* 464 U.S. 1033 (1984). *See supra* note 30 and accompanying text.

89. *See supra* note 44.

90. *See supra* notes 21-22 and accompanying text.

91. 17 U.S.C. § 102(a) (1977). *See supra* note 18.

92. 17 U.S.C. § 101 (1977). *See supra* note 21.

93. M. Kramer Mfg. Co. v. Andrews, 783 F.2d 421, 442 (4th Cir. 1986). ("The [computer] program . . . is, by definition a 'copy' [of the audiovisual display].").

94. *See* Stern Elecs., Inc. v. Kaufman, 669 F.2d 852, 855 (2d Cir. 1982) ("[M]any different computer programs can produce the same 'results,' whether those results are an analysis of

cannot be eligible for protection under the copyright in the program.

A COPYRIGHT IN A COMPUTER PROGRAM MAY NOT PROTECT THE DISPLAY

The *Softklone* decision expressly limits the extent of protection available from a copyright in a computer program. A copyright in a computer program cannot extend protection to the program's audiovisual display, so the display must be protected by its own copyright.[95]

In so holding, the *Softklone* court emphasized the apparent anomaly, due to the nature of computers, wherein a computer program is considered a "copy" of its audiovisual display, but a display is not considered a copy of its program.[96] Therefore, since the display is not a copy of its copyrighted program, it is not protected.

However, under the *Broderbund* extension, even though a display is not a copy of its program, it would be protected nonetheless. The effect of this extension would be to create the situation where any computer program producing the same display as that produced by a copyrighted program would infringe upon that copyright. Even if the programs were in no way similar and the display was merely a blank form conveying no information, an infringement would result.

There is little case law pertaining to this question of whether a copyright in a computer program also protects the program's audiovisual display. But, with *Softklone* expressly rejecting *Broderbund*, the battle line appears more distinct. The Third Circuit, in *Whelan*, held that "copyright protection of computer programs may extend beyond the programs' literal code to their structure, sequence, and organization."[97] The Ninth Circuit District Court in *Broderbund* agreed, holding that "copyright protection is not limited to the literal aspects of a computer program, but rather . . . extends to the overall structure of a program."[98] But, it held further that such protection "includ[es the program's] audiovisual display."[99]

Now, after the *Softklone* court's rejection of *Broderbund* in favor of *Whelan*, the Third and Eleventh Circuits (in *Whelan* and *Softklone*, re-

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financial records or a sequence of images and sounds."); Midway Mfg. Co. v. Strohon, 564 F. Supp. 741, 749 (N.D. Ill. 1983) ("[I]t is quite possible to design a game that would infringe Midway's audiovisual copyright but would use an entirely different computer program.").

95. *Softklone*, 659 F. Supp. at 456.

96. *Id. See supra* note 21 and accompanying text.

97. *Whelan*, 797 F.2d at 1248, *cert. denied,* ___ U.S. ___, 107 S. Ct. 877 (1987).

98. Broderbund Software, Inc. v. Unison World, Inc., 648 F. Supp. 1127, 1133 (N.D. Cal. 1986).

99. *Id.*

spectively) extend a computer program's copyright protection beyond the program's source and object codes to its overall structure and organization. The Ninth Circuit (in *Broderbund*) goes further, extending that protection to the program's audiovisual display as well.

Hence, it may depend upon where the infringement action is filed as to whether or not a computer display is protected by the copyright in the underlying program. Alleged copiers/infringers of a display would hope to be sued in the Third or Eleventh Circuits, while the copyright holder would like to pursue his or her rights in the Ninth Circuit.

COPYRIGHT CRITERIA FOR AUDIOVISUAL DISPLAY

A non-pictorial audiovisual display, often used for other than mere entertainment, may be protected by its own copyright. However, the display must not be a necessary expression of its underlying idea, and it must not be a "blank form" merely recording data, but must convey information to its user.

The underlying idea is the process or manner by which the display operates, namely, the function performed by the computer program. The expression is the method by which the idea is communicated or conveyed to the user, namely, the display. For the display not to be a necessary expression of its underlying idea, it must not be a necessary incident to the program. Use or operation of the program must not be dependent upon the display. The program should be capable of functioning independently of the display. For example, operation of Digital's Crosstalk program was not dependent upon the visual aspects (highlighting and capitalization of the first two letters of the parameter/command terms) of the display. Further, the display should involve creativity and originality beyond the basic ideas embodied within the display; and the display should be merely one of several alternatives possible to convey the desired expression.

The display must also not be a blank form. It must provide some information to its user. For example, although Digital's Crosstalk display recorded the parameter/command terms entered by its user, it also conveyed information by displaying the operational status of the Crosstalk program in a convenient and readable form as it was functioning.

SUBSEQUENT IMPROVEMENT AND POTENTIAL INFRINGEMENT BY OTHERS

Competing software developers can still improve and build upon computer programs and displays already created and copyrighted. To

avoid copyright infringement, subsequent software developers must use different structures for their underlying programs, and their audiovisual displays' "original works" must not be substantially similar to a prior copyrighted display.

CONCLUSION

The *Softklone* decision appears to have greater support than the *Broderbund* decision. The "copy" anomaly which prevents extending a computer program's copyright protection to its audiovisual display, as discussed and relied upon in *Softklone*, has statutory support[100] and case law support[101] which recognize the unusual nature of computers as the cause of that anomaly.

Extension of protection from a copyright in a computer program to its audiovisual display as in *Broderbund* appears to have support only in an over-expansive interpretation of prior case law which, in turn, tries to infer this extension from the intent of Congress as expressed in the Copyright Act of 1976.[102] Moreover, the apparent effect of the *Broderbund* extension of protection would be to extend copyright protection to "necessary expressions," contrary to case law,[103] and to "blank forms," contrary to federal regulation.[104]

Mark A. Dalla Valle

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100. 17 U.S.C. §§ 101-02 (1977).

101. M. Kramer Mfg. Co. v. Andrews, 783 F.2d 421, 442 (4th Cir. 1986) ("The [computer] program . . . is, by definition a 'copy' [of the audiovisual display]."). *See also* Stern Elecs., Inc. v. Kaufman, 669 F.2d 852 (2d Cir. 1982) ("[M]any different computer programs can produce the same 'results,' whether those results are an analysis of financial records or a sequence of images and sounds."); Midway Mfg. Co. v. Strohon, 564 F. Supp. 741 (N.D. Ill. 1983) ("[I]t is quite possible to design a game that would infringe Midway's audiovisual copyright but would use an entirely different computer program.").

102. *See supra* notes 65-74 and accompanying text.

103. *Kramer*, 783 F.2d at 436 ("If there is only one way to express the idea, 'idea' and 'expression' merge and there is no copyrightable material."). *See also* Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240, 1253 (3d Cir. 1983) ("If other programs can be written or created which perform the same function . . . then that program is an expression of the idea and hence copyrightable."), *cert. dismissed,* 464 U.S. 1033 (1984).

104. 37 C.F.R. § 202.1(c) (1986).

APPENDIX

Exhibit A

Crosstalk XVI Status Screen

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NAme                          Crosstalk defaults          LOaded C:STD.XTK
NUmber                                                     CApture Off          Off line

                              Communications parameters
SPeed    1200    PArity None   DUplex  Full    DEbug    Off         Filter settings
DAta     8       STop   1      EMulate None    TAbex    Off     LFauto    Off
POrt     1                     MOde    Call    INfilter On      BLankex   Off
                                                               OUtfiltr  On
                 Key settings                          SEnd control settings
ATten Esc                       COmmand ETX(*C)         CWait None
SWitch Home                     BReak   End             LWait None

                          List of Crosstalk commands
NAme     ANswback    APrefix    ATten     BReak      DEbug
DPrefix  DSuffix     EDit       EMulate   EPath      FIlter
POrt     RDials      RQest      SCreen    SNapshot   SWitch
TImer    VIdeo       ACcept     CWait     DNames     FKeys
GO       LFauto      LOad       LWait     MOde       QUit
RUn      SEnd        XDos       BKsize    BLankex    BYe
CApture  COmmand     CStatus    DAta      DIr        DO
More to come ... Press ENTER: -
DUplex   FLow        GKermit    HAndshak  HElp       KErmit
LIst     OUtfiltr    PArity     PIcture   PMode      PRinter
RCve     RXmodem     SPeed      STop      TAbex      TYpe
UConly   XKermit     XMit       XXmodem
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For more information on a command, type "help xx" where "xx" is the command name (for example, "help LO" for information on the LOad command). If you need more general help, type "help general" or "help call".

Command?

Exhibit B

MIRROR Status Screen

NAme
NUmber

LOaded STD.XTK
CApture Off   Off-line

MIRROR Default Settings

Communications parameters

SPeed 1200	PArity None	DUplex Full	DEbug Off	LFauto Off
DAta 8	STop 1	EMulate None	TAbex Off	BLankex Off
POrt 1		MOde Call	INfilter On	OUtfiltr On

Filter Settings

Key settings

ATten Esc   COmmand   ETX(*C)
SWitch Home   BReak   End

SEnd control settings
CWait None
LWait None

List of available MIRROR commands

ABort	ALarm	ANswback	APrefix	ASk	ATten
BAckgrnd	BLankex	BReak	BYe	CApture	CDir
CLear	CRc	CStatus	CWait	DAta_bits	DEbug
DIr	DO	DPrefix	DRive	DSuffix	DUplex
EDit	EPath	ERase	FIlter	FKeys	FLow
GKermit	HAndshake	HElp	IF	INfilter	JUmp
KErmit	LAbel	LFeed	LIst	LOad	LWait	MEssage

More to come . . . press RETURN:

RDial	RHayes	RKermit	RQuest	RUn	RWind
RXmodem	SBreak	SCreen	SEnd	SKip	SNapshot
SPeed	STop_bits	SWitch	TAbexpand	TImer	TUrnarnd	TYpe
UC_only	WAit	WHen	WRite	XBatch	XDos	XHayes
XKermit	XMit	XXmodem			

For HElp on a particular command, enter HE followed by the command name (e.g., HE LW for HElp on the LWait command).

Command?