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Copyright Protection for Computer Software in the Nineties

Evan Finkel

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ARTICLE

**COPYRIGHT PROTECTION FOR COMPUTER
SOFTWARE IN THE NINETIES**

Evan Finkel†

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COPYRIGHT PROTECTION FOR COMPUTER SOFTWARE IN THE NINETIES

I. INTRODUCTION

This article opens with a review of the historical development of copyright law as it relates to computer software. Procedures for securing a copyright are then discussed, as well as the requirements for registering that copyright. Attention is then turned to recent developments in copyright law impacting those in the software industry, including issues of copyright ownership, infringement, validity, and enforceability; recordation of security interests; software rental prohibitions; and the validity of shrink wrap licenses. The objectives of this analysis are simple: (1) To provide an overview of important copyright issues for consideration by those in the software industry, and to raise the priority given to such matters; and (2) to demonstrate why one must constantly reevaluate internal policies and practices in light of the rapidly changing rules governing copyright protection for computer programs. Ultimately this analysis should educate the reader in contemporary issues of software copyright protection that need to be addressed in order to maximize the value of one's own copyrights, while minimizing the risk that one's products will run afoul of the copyrights of others.

II. A HISTORICAL PERSPECTIVE

The U.S. Constitution gives Congress the power to promote the progress of science by securing for limited times to authors the exclusive right to their writings.¹ Exercising that power, Congress enacted the Copyright Act of 1909² which provided protection for "all the writings of an author"³ including books.⁴ In 1964, the Copyright Office announced that it would register claims to copyright in computer programs under the 1909 Act as "books".⁵ From 1964 to 1977, copyright claims in less than 2000 programs were registered.⁶ The 1909 Act was superseded by the Copyright Act of

1. U.S. CONST. art. I, § 9, cl. 8.

2. This statute is hereinafter referred to as "the 1909 Act" or "the Act of 1909". The 1909 Act, as last amended in 1974, is reproduced in M.B. NIMMER & D. NIMMER, *NIMMER ON COPYRIGHT*, Appendix 6 (1990 ed.) [hereinafter NIMMER].

3. 17 U.S.C. § 4 (1974).

4. 17 U.S.C. § 5(a) (1974).

5. NIMMER, *supra* note 2, § 2.04[C], at 2-46 n.27.

6. A. J. Levine, *History of Copyright Protection for Computer Programs*, paper presented at *The 1991 Pacific Rim Computer Law Conference* in Newport Beach, California.

1976, which became effective on January 1, 1978.⁷ The 1976 Act provided protection for "original works of authorship fixed in a tangible medium of expression"⁸ including "literary works."⁹ The Legislative History of the 1976 Act explains that copyright protection for computer programs existed under the 1909 Act,¹⁰ as would also be the case under the new Act since the term "literary works" includes "computer data bases, and computer programs"¹¹

While computer programs were copyrightable material under both the 1909 and 1976 Acts, it was not clear to what extent, if any, the copyright owner could exclude others from using them in a computer—that is, pursue "an action for infringement . . . by means of a computer."¹² Congress could have tackled that thorny issue in the 1976 Act. Instead, Congress included a statement in § 117 of the new Act that whatever the law had been it would continue to be, without ever stating what the law had been.¹³ Congress said that "it would be premature to change existing law on computer uses at present" since a commission, appointed by Congress to study the issue and recommend changes was, "now engaged in making a thorough study of emerging patterns in this field."¹⁴ The commission, established by Congress on the last day of 1974, was called the National Commission on New Technological Uses of Copyrighted Works ("CONTU").¹⁵

7. Pub. L. No. 94-553, 90 Stat. 2598 (1976) (enacted October 19, 1976, effective January 1, 1978, codified as 17 U.S.C. § 101 *et seq.*) [hereinafter "the 1976 Act", "the Act of 1976" or "the new Act"]. The 1976 Act, as amended in November 1988, is reproduced in NIMMER, *supra* note 2, at Appendix 2.

8. 17 U.S.C. § 102 (1976).

9. 17 U.S.C. § 102(1) (1976).

10. H. R. REP. NO. 94-1476, 94th Cong., 2nd Sess. 51 (1976) (comments on 17 U.S.C. § 102) [hereinafter HOUSE REPORT] reprinted in NIMMER, *supra* note 2, at Appendix 4.

11. HOUSE REPORT, *supra* note 10, at 54 (comments on 17 U.S.C. § 102) (the quoted passage continues "to the extent that they incorporate authorship in the programmer's expression of original ideas, as distinguished from the ideas themselves"). Also see HOUSE REPORT, *supra* note 10, at 116 (comments on 17 U.S.C. § 117) ("With respect to the copyrightability of computer programs, the ownership of copyrights in them, the term of protection, and the formal requirements of the remainder of the bill, the new statute would apply.").

12. HOUSE REPORT, *supra* note 10, at 116 (comments on 17 U.S.C. § 117).

13. 17 U.S.C. § 117 (1976) stated: "this title does not afford to the owner of copyright in a work any greater or lesser rights with respect to the use of the work in conjunction with automatic systems capable of storing, processing, retrieving, or transferring information, or in conjunction with any similar device, machine, or process, than those afforded to works under the law, whether title 17 or the common law or statutes of a State, in effect on December 31, 1977, as held applicable and construed by a court in an action brought under this title."

14. HOUSE REPORT, *supra* note 10, at 116 (comments on 17 U.S.C. § 117).

15. Pub. L. No. 93-573, 93rd Congress, S. 3976, December 31, 1974, reprinted in NIMMER, *supra* note 2, at Appendix 19 (CONTU's charter was in part "to study and compile data

In 1980, Congress amended the 1976 Act consistent with recommendations made in CONTU's Final Report of July 1978.¹⁶ The term "computer program" was defined as "a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result."¹⁷ Section 117 was also amended to provide that it was not an infringement for the "owner of a copy" of another's copyrighted computer program to make a copy or adaptation of the program "as an essential step in the utilization of the computer program in conjunction with a machine" or "for archival purposes."¹⁸ Thus, CONTU's recommendations, and the amendments adopted therefrom, provided no guidance as to the scope of copyright protection to be given computer programs (that is, what would constitute infringement of a computer program copyright). That was left to the courts. *A fortiori*, one must turn to the cases decided after the 1980 amendments to determine the scope of protection now afforded to computer programs in the United States.¹⁹

on . . . the reproduction and use of copyrighted works of authorship . . . in conjunction with automatic systems capable of storing, processing, retrieving, and transferring information" and to "make recommendations as to such changes in copyright law or procedures that may be necessary to assure for such purposes access to copyrighted works, and to provide recognition of the rights of copyright owners.").

16. The CONTU Final Report (also referred to herein as "the CONTU Report" or "the Report"), is reproduced in C.H. SHERMAN, *COMPUTER SOFTWARE PROTECTION LAW*, Appendix A (1990 ed.).

17. Pub. L. No. 96-517, § 10(a), 94 Stat. 3015, 3028, (1980) (codified as amended at 17 U.S.C. § 101) [hereinafter "1980 Amendments"]. The 1980 Amendments are reflected in NIMMER, *supra* note 2, at Appendix 2, which contains a reproduction of the 1976 Act, as amended in November 1988.

18. The 1980 Amendments, § 10(a), codified as 17 U.S.C. § 117, provide:

Notwithstanding the provisions of § 106, it is not an infringement for the owner of a copy of a computer program to make or authorize the making of another copy or adaptation of that computer program provided:

(1) that such a new copy or adaptation is created as an essential step in the utilization of the computer program in conjunction with a machine and that it is used in no other manner, or

(2) that such new copy or adaptation is for archival purposes only and that all archival copies are destroyed in the event that continued possession of the computer program should cease to be rightful.

Any exact copies prepared in accordance with the provisions of this section may be leased, sold, or otherwise transferred, along with the copy from which such copies were prepared, only as part of the lease, sale, or other transfer of all rights in the program. Adaptations so prepared may be transferred only with the authorization of the copyright owner.

19. Notwithstanding that copyright registration of computer programs began back in 1964, case law addressing the scope of copyright protection did not truly begin to develop until after the 1980 Amendments. See NIMMER, *supra* note 2, § 2.04[C], at 2-46 n.27. It has been said that "the copyrightability of computer programs is firmly established after the 1980

III. SECURING A COPYRIGHT AND OBTAINING A REGISTRATION

A. *Securing A Copyright*

Under the 1976 Act, "Copyright protection subsists . . . 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", including literary works and audiovisual works.²⁰ Thus, copyright protection begins when the work is "fixed in any tangible medium of expression"²¹ (e.g.,

Amendment to the Copyright Act." *Williams Elecs., v. Artic Int'l, Inc.*, 685 F.2d 870, 875, 215 U.S.P.Q. 405 (3rd Cir. 1982).

In evaluating the scope of computer program copyright protection, the courts would have the benefit of CONTU's Final Report which discusses that issue as well as many others. However, some courts have refused to rely on the Report except to "help to explain the context in which Congress acted" on the theory that Congress adopted the two short recommendations of CONTU, not the entire report. *Lotus Dev. Corp. v. Paperback Software Int'l*, 740 F. Supp. 37, 54, 15 U.S.P.Q.2d 1577, 1588 (D. Mass. 1990) ("CONTU, of course, was not an official voice of Congress, and its views are not, without more, attributable to Congress. Thus, courts must not treat the CONTU report as legislative history, in the ordinary sense, much less as an authoritative statement about manifested legislative intent." The Court did believe, however, that Congress followed the CONTU Final Report and, therefore, "the express views of the Commission, to the extent not repudiated by the Congress, may help to explain the context in which Congress acted, which in turn may support inferences about the meaning of any otherwise ambiguous passages in which Congress declared.").

Other courts have relied on the CONTU Final Report *only* as to statements relating to the amended provisions of the 1976 Act. *Whelan Assocs. v. Jaslow Dental Lab.*, 797 F.2d 1222, 1241, 230 U.S.P.Q. 481 (3rd Cir. 1986) (the CONTU Report was considered a "surrogate legislative history" in construing the 1980 amendments to the copyright law; but the Court also said "the CONTU Report has force only insofar as it can be said to represent the will of Congress" and "there is no sense in which it represents the will of Congress with respect to provisions not amended in response to the report.").

Still other courts have heavily relied on the CONTU Final Report "as accepted by Congress" even though that position seems totally at odds with the facts. *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240, 1252, 219 U.S.P.Q. 113 (3rd Cir. 1983) ("We can consider the CONTU Report as accepted by Congress since Congress wrote into the law the majority's recommendations almost verbatim.").

Hereinafter the terms "the 1976 Act", "the Act of 1976" or "the new Act," refer to the statute as last amended and reproduced in NIMMER, *supra* note 2, at Appendix 2. All future references to 17 U.S.C. § —, refer to the statute as last amended.

20. 17 U.S.C. § 102(a)(1),(a)(6) (1976). Literary works are defined in the 1976 Act as "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." 17 U.S.C. § 101. Audiovisual works are defined as "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." 17 U.S.C. § 101.

21. The 1976 Act provides that "A work is 'fixed' in a tangible medium of expression

written on paper) and thereby "created".²² Nothing more is required. For example, placement of a copyright notice on copies of a work is no longer necessary to create or protect the copyright in the work, though it is recommended.²³ Similarly, obtaining a certificate of copyright registration from the U.S. Copyright Office is not necessary to create or protect the copyright in a work, though registration may be a prerequisite to filing suit,²⁴ and *early* registration may constitute *prima facie* evidence of copyright validity should the copyright owner sue for infringement,²⁵ and *early* registration may also be required for recovery of attorneys' fees and liquidated damages should the claimant prevail in an infringement action.²⁶ The

when its embodiment in a copy . . . 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.

22. A work is created when "it is fixed in a copy . . . for the first time. . ." 17 U.S.C. § 101. The term copies is defined in the 1976 Act as "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." 17 U.S.C. § 101.

23. Omission of copyright notice on copies of a work distributed *after* the effective date of the Berne Convention Implementation Act of 1988 (March 1, 1989) *does not* result in forfeiture of copyrights in the work. 17 U.S.C. § 405(a). The Berne Convention is a convention for the protection of literary and artistic works originally signed in Berne, Switzerland on September 9, 1886. The U.S. recently became a signatory to the Berne Convention and Congress passed the Berne Convention Implementation Act of 1988 (effective March 1, 1989) which made changes to the 1976 Act in order to comply with the requirements of the Berne Convention. Pub. L. No. 100-568, 102 Stat. 2853 (October 31, 1988). The Berne Convention Implementation Act of 1988 is reproduced in NIMMER, *supra* note 2, Appendix 2A.

Most copyright practitioners continue to recommend the use of copyright notice. The recommended format for a proper copyright notice is: C in a circle or the word Copyright or the abbreviation Copyr. followed by the year of first publication (or the date the work was created) followed by the name of the copyright owner and the phrase ALL RIGHTS RESERVED. See 17 U.S.C. § 401(b). It is also recommended that the notice appear at the beginning or end of the program so that it is easily seen when the program is printed; and on the initial display screen when the program is loaded; and on the media on which the program is placed (e.g., diskette; ROM; CDROM; etc.); and on any container or package in which the program is sold (e.g., box). See 37 C.F.R. § 201.20(g) (1990) (37 C.F.R. §§ 201 *et seq.*, which are the Copyright Regulations promulgated under the 1976 Act, are reproduced in Appendix 3 of NIMMER, *supra* note 2).

24. Except for certain works having a country of origin outside the U.S., registration is a prerequisite to filing an infringement action. 17 U.S.C. § 411(a). The only works excluded are Berne Convention works having a country of origin outside the U.S.; both quoted terms are defined in 17 U.S.C. § 101.

25. Registration made before or within five years after first publication of the work constitutes *prima facie* evidence of the validity of the copyright and the facts stated in the certificate. 17 U.S.C. § 410(c). The term publication is defined in 17 U.S.C. § 101 as "the distribution of copies . . . of a work to the public by sale or other transfer of ownership, or by rental, lease, or lending" and "offering to distribute copies to a group of persons for purposes of further distribution . . ."

26. Under 17 U.S.C. § 504(a)(1) & (b), in an action for copyright infringement, the copyright owner may recover his actual damages suffered as a result of the infringement, and

copyright owner is granted certain exclusive rights, including the exclusive right "to reproduce the copyrighted work in copies";²⁷ "to prepare derivative works based upon the copyrighted work";²⁸ "to distribute copies . . . of the copyrighted work to the public by sale or other transfer of ownership, or by rental, lease, or lending";²⁹ and to import copies of the copyrighted work into the United States.³⁰

B. *Obtaining A Certificate Of Copyright Registration*

Pursuant to its authority under 17 U.S.C. § 408(c), the Register of Copyrights has promulgated regulations, 37 C.F.R. § 202 *et seq.*, prescribing the requirements for securing a certificate of copyright registration. Generally, definitions in § 101 of the 1976 Act apply to like terms in the regulations.³¹ For the purpose of registration, the regulations prescribe four classes of work.³² The class most applicable to computer programs being "Class TX" for "non-dramatic literary works,"³³ together with an application form for each class and the form being "Form TX."³⁴ The application for a certificate of copyright registration must include the Form TX fully completed, including the certification at the end thereof, an application fee (now \$20.00), a deposit of identifying portions of the program (discussed below)³⁵ with the position of the copyright notice,

the infringer's profits attributable to the infringement and not taken into account in determining actual damages. Alternatively, under 17 U.S.C. § 504(a)(2) & (c) the copyright owner can recover fixed, liquidated damages called statutory damages which is particularly advantageous when he cannot prove substantial actual damages or profits by the infringer. Under 17 U.S.C. § 505 the court has discretion to award a copyright owner his reasonable attorneys' fees should he prevail in the litigation. However, 17 U.S.C. § 412 provides that no award of statutory damages or attorneys' fees is allowed: (1) for infringement of copyright in an unpublished work if the infringement commenced before the effective date of its registration; or (2) for infringement of copyright commenced after first publication of the work and before the effective date of its registration, unless registration is made within three months after the first publication of the work.

27. The definition of copies under the 1976 Act is set out in *supra* note 22.

28. The term derivative work is defined in the 1976 Act as "a work based upon one or more preexisting works, such as a translation . . . or any other form in which a work may be recast, transformed or adapted." 17 U.S.C. § 101.

29. 17 U.S.C. § 106(1)-(3).

30. 17 U.S.C. § 602(a).

31. See 37 C.F.R. § 201.20(b)(1), § 202.3(a)(2), § 202.20(b)(3) (1990).

32. 37 C.F.R. § 202.3(b)(1) (1990).

33. 37 C.F.R. § 202.3(b)(1)(i)(1990).

34. 37 C.F.R. § 202.3(b)(2) (1990).

35. See generally 37 C.F.R. § 202.3(c) (1990); 37 CFR § 202.3(b)(4)(ii)(A)-(C) (1990) (group registrations of databases). Note should be made that the Register of Copyrights may grant an applicant "special relief" from the deposit requirement when it believes such is warranted. 37 C.F.R. § 202.20(d) (1990).

if any, clearly shown.³⁶ The general rule is that only one registration for each version of a work is required.³⁷ However, there are exceptions, one of which is that “[s]upplemental registrations may be made . . . to correct or amplify the information in a [prior] registration”³⁸

According to the Copyright Office, “all copyrightable expression in a single work owned by the same claimant and embodied in a computer program, or first published as a unit with a computer program, including computer screen displays, is considered a single work and should be registered on a single application form.”³⁹ That is consistent with the general rules for registration of the protected elements of any other work.⁴⁰ It is also consistent with case law. For example, in *GCA Corp. v. Chance*,⁴¹ the court held that plaintiff’s registration on the source code of its program was adequate to support a suit for infringement based on copying of the object code by a defendant not having access to the source code: “Because the object code is the encryption of the copyrighted source code, the two are to be treated as one work; therefore, copyright [registration] of the source code protects the object code as well.”⁴² Similarly, in *M. Kramer Mfg. Co. v. Andrews*, the court held that since a computer program in a ROM is the fixation of (and thus a copy of) a video game for which plaintiff obtained an audiovisual copyright, “[a] copyright in the audiovisual display, which display is created by a computer program, protects not only the audiovisual from copying, but also the underlying computer program to the extent the program embodies the game’s expression.”⁴³

Furthermore, recent amendments to the Copyright Regulations provide that whenever certain very precise conditions are met, “a single [group] registration may be made for automated databases and their updates or other derivative versions that are original works of authorship . . . [which are either] unpublished . . . [or]

36. 37 C.F.R. § 202.21(e) (1990). Where the copyright notice is not otherwise apparent, it should be pointed out and reproduced in a cover letter or otherwise.

37. 37 C.F.R. § 202.3(b)(6) (1990).

38. 37 C.F.R. § 202.3(b)(6)(iv) (1990). The requirements for filing a supplemental registration are set out in 37 C.F.R. § 201.5 (1990).

39. 36 PAT. TRADEMARK & COPYRIGHT J.(BNA) No. 884 at 152-55 (June 9, 1988).

40. 37 C.F.R. § 202.3(b)(3) and (6) (1990).

41. 217 U.S.P.Q. 718 (N.D. Cal. 1982).

42. *Id.* at 720.

43. 783 F.2d 421, 442, 228 U.S.P.Q. 705 (4th Cir. 1986).

published only in the form of machine-readable copies.”⁴⁴

1. Deposit

17 U.S.C. § 408(c)(1) authorizes the Register of Copyrights to specify by regulation the administrative classes into which works are to be placed for purposes of deposit and registration, and the nature of the copies to be deposited in the various classes specified. Under that authority, the Register of Copyrights promulgated 37 C.F.R. § 202.20(c)(2)(vii) which is directed to “computer programs” and “databases” which are either unpublished or published only in machine-readable copies (e.g., magnetic tape or disks, punched cards, semiconductor chip products, and the like).⁴⁵

a. Computer Programs

As to computer programs, the deposit shall be on paper or mi-

44. 37 C.F.R. § 202.3(b)(4)(i) (1990). The conditions, set out in 37 C.F.R. § 202.3(b)(4)(i)(A)-(G), include:

- (A) All of the updates or other revisions are owned by the same copyright claimant;
- (B) All of the updates or other revisions have the same general title;
- (C) All of the updates or other revisions are similar in their general content, including their subject;
- (D) All of the updates or other revisions are similar in their organization;
- (E) Each of the updates or other revisions as a whole, if published before March 1, 1989, bears a statutory copyright notice as first published and the name of the owner of copyright in each work (or an abbreviation by which the name can be recognized, or a generally known alternative designation of the owner) was the same in each notice;
- (F) Each of the updates or other revisions if published was first published, or if unpublished was first created, within a three-month period in a single calendar year; and
- (G) The deposit accompanying the application complies with § 202.20(c)(2)(vii)(B).

45. 37 C.F.R. § 202.20(c)(2)(vii) (1990) which provides that “[i]n cases where a computer program, database . . ., if unpublished is fixed, or if published is published only in the form of machine-readable copies (such as magnetic tape or disks, punched cards, semiconductor chip products, or the like, from which the work cannot ordinarily be perceived except with the aid of a machine or device, the deposit shall consist of: . . .” 37 C.F.R. § 202.20(c)(2)(ix) (1990) provides that “where a published literary work is embodied in copies containing both visually-perceptible and machine-readable material, the deposit shall consist of the visually-perceptible material and identifying portions of the machine-readably material.” The term publication is defined in 17 U.S.C. § 101 as “the distribution of copies . . . of a work to the public by sale or other transfer of ownership, or by rental, lease, or lending” and “offering to distribute copies to a group of persons for purposes of further distribution”

crofilm⁴⁶ and shall consist of the page containing the copyright notice, if any, *plus* one copy of the first and last 25 pages of source code.⁴⁷ If the source code is 50 pages or less, all the source code is to be deposited.⁴⁸ However, if the program is a revised version but the revisions do not occur throughout the program, that is, the revisions will not be reflected in the first and last 25 pages, the deposit should be of 50 pages representative of the revised material.⁴⁹

Since materials deposited with the Copyright Office are available to the public for inspection,⁵⁰ when the program contains trade secret material, the deposit copy may be the page with the copyright notice plus either: (1) the first and last 25 pages of source code (or, if the source code is 25 pages or less, the entire source code) with the trade secret material blocked out; (2) the first and last 10 pages of source code; or (3) the first and last 25 pages of *object* code and any consecutive 10 pages of *source* code.⁵¹ Alternatively, if the program is a revised version but the revisions do not occur throughout the program, that is, the revisions will not be reflected in the first and last 25 pages, the deposit should be of (1) 20 pages of source code representative of the revised material, or (2) 50 pages of source code representative of the revised material with portions of the source code containing trade secrets blocked out.⁵²

Where object code is deposited, the certificate of registration will be issued under the Copyright Offices Rule of Doubt which "warns that no determination has been made concerning the existence of copyrightable authorship" since the Office cannot know that what is in fact deposited is a computer program.⁵³ This Rule of Doubt sounds worse than it is. What you deposit will presumably be a computer program and an infringing defendant will have a near impossible time proving otherwise at trial. Indeed, the author is aware of no case in which a Rule of Doubt registration played a significant role in a court's analysis of the validity of the copyright registration.

46. 37 C.F.R. § 202.20(c)(2)(vii)(A) (1990).

47. 37 C.F.R. § 202.20(c)(2)(vii)(A)(1) (1990).

48. 37 C.F.R. § 202.20(c)(2)(vii)(A)(1) (1990).

49. 37 C.F.R. § 202.20(c)(2)(vii)(A)(1) (1990).

50. 37 C.F.R. § 201.2(b) (1990).

51. 37 C.F.R. § 202.20(c)(2)(vii)(A)(2) (1990).

52. 37 C.F.R. § 202.20(c)(2)(vii)(A)(2) (1990). Blocking out of trade secret material is never permissible, however, unless the blocked-out portions are proportionately less than the remaining portions which includes an appreciable amount of original computer code.

53. 37 C.F.R. § 202.20(c)(2)(vii)(B) (1990).

b. Computer Program Generated Display Screens

Where the application to claim copyright in a computer program includes a specific claim in related computer screen displays, the deposit must *also* include a visual reproduction of the copyrightable expression in the form of printouts, photographs or drawings no smaller than 3"x 3" and no larger than 9"x 12".⁵⁴ However, if the authorship of the work is predominantly audiovisual and the computer screen material is more than simply a demonstration of the functioning of the computer program, a one-half inch VHS format videotape reproducing the copyrightable expression is required.⁵⁵ This latter provision is directed to game software where the display screen output is a continuously changing audiovisual work,⁵⁶ rather than conventional applications software where the display screen output is generally a group of still screens.

c. Databases

As to databases (and other computerized information works such as compilations, statistical compendia and the like), the deposit shall be on paper or microfilm⁵⁷ and shall consist of the first and last 25 pages.⁵⁸ However, if the work is an automated database comprising multiple separate or distinct data files,⁵⁹ the deposit should be 50 complete data records from each data file or the entire data file, whichever is less, *plus* a certain descriptive statement.⁶⁰ If the author is seeking an *individual* registration of a revised (up-

54. 37 C.F.R. § 202.20(c)(2)(vii)(C)(1) (1990).

55. 37 C.F.R. § 202.20(c)(2)(vii)(C)(2) (1990).

56. Audiovisual works are defined as "works which 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." 17 U.S.C. § 101.

57. 37 C.F.R. § 202.20(c)(2)(vii)(D) (1990).

58. 37 C.F.R. § 202.20(c)(2)(vii)(D)(1) (1990).

59. A data file is defined as "a group of data records pertaining to a common subject matter regardless of their size or the number of data items in them." 37 C.F.R. § 202.20(c)(2)(vii)(D)(2) (1990).

60. 37 C.F.R. § 202.20(c)(2)(vii)(D)(4) (1990). The descriptive statement must include information about use of proper copyright notice (§ 202.20(c)(2)(vii)(D)(6)-(7)), as well as the following (37 C.F.R. § 202(c)(2)(vii)(B)(5)):

- (i) The title of the database;
 - (ii) A subtitle, date of creation or publication, or other information, to distinguish any separate or distinct data files for cataloging purposes;
 - (iii) The name and address of the copyright claimant;
 - (iv) For each separate file, its name and content, including its subject, the origin(s) of the data, and the approximate number of data records it contains;
- and . . .

dated) version of the work, the deposit requirement is 50 representative pages or data records which have been added or modified.⁶¹ However, if the author is seeking a *group* registration for a revised (updated) version of the work, the deposit requirement is 50 representative pages or data records which have been added or modified on one representative publication date for published works or on one representative creation date for unpublished works, *plus* a certain descriptive statement about the database.⁶²

IV. OWNERSHIP ISSUES

A. *Ownership of Copyright*

Section 201(a) of the 1976 Act provides that copyright ownership vests initially in the author(s) of the work. A transfer of ownership from the author generally requires a writing signed by the author conveying such rights to the transferee.⁶³ It therefore is quite important to identify the author of the work.

1. Work Made For Hire

"As a general rule, the author is the party who actually creates the work, that is, the person who translates an idea into a fixed, tangible expression entitled to copyright protection."⁶⁴ However, an important exception is provided in § 201(b). If a work is a 'work made for hire,' "the employer or other person for whom the work was prepared is considered the author" and owns the copyright absent a written agreement to the contrary.⁶⁵ In the computer software field where it is common for a company to engage outside programmers to write code for a given project, the 'work made for hire' concept "carr[ies] profound significance."⁶⁶

There are two types of arrangements which may constitute a 'work made for hire.' The first, set out in § 101(2) of the 1976 Act,

61. 37 C.F.R. § 202.20(c)(2)(vii)(D)(3) (1990).

62. 37 C.F.R. § 202.20(c)(2)(vii)(D)(5) (1990). The descriptive statement is described in endnote 61, except the statement would also need to include (37 C.F.R. § 202.20(c)(2)(vii)(D)(5)):

(v) In the case of revised or updated versions of an automated database, information as to the nature and frequency of changes in the database and some identification of the location within the database or the separate data files of the revisions.

63. 17 U.S.C. § 204(a). The exception is a transfer by operation of law, such as where rights in the work are subject to state community property laws.

64. *Community For Creative Non-Violence v. Reid*, 490 U.S. 730, 737, 109 S.Ct. 2166, 104 L.Ed.2d 811, 10 U.S.P.Q.2d 1985 (1989) [hereinafter CCNV].

65. 17 U.S.C. § 201(b); CCNV, 490 U.S. at 737.

66. CCNV, 490 U.S. at 737.

provides that a 'work made for hire' is "a work specially ordered or commissioned for use" in certain, very specific categories of copyrighted works "if the parties expressly agree in a written instrument signed by them that the work shall be considered a work made for hire." This class is not typically involved in the computer program context because the enumerated categories of works do not generally apply to computer programs.⁶⁷

The second type of 'work made for hire', set out in § 101(1) of the 1976 Act, provides that a 'work made for hire' is "a work prepared by an employee within the scope of his or her employment." Until recently, courts applied inconsistent tests for determining whether the work was prepared by an "employee within the scope of his or her employment." For example, courts held that a work was considered to have been prepared by an "employee within the scope of his or her employment" when the hiring party "retains the right" to control the creation of the work, when the hiring party "actually wielded control" over creation of the work, when the person creating the work was an employee under the "common law of agency", or when the person creating the work was a "formal, salaried employee."⁶⁸

In *CCNV*, the Supreme Court resolved the issue, holding that "a work [was] prepared by an employee within the scope of his or her employment," and, thus a 'work made for hire,' when the creator of the work was an employee under the general common law of agency.⁶⁹ The Court made clear that the term 'general common law' meant the "federal rule of agency, rather than . . . state agency law . . . given the Act's express objective of creating national uniform copyright law."⁷⁰ The Court set out a non-exhaustive list of

67. The categories are "a work specially ordered or commissioned for use as a contribution to a collective work, as a part of a motion picture or other audiovisual work, as a translation, as supplementary work, as a compilation, as an instructional text, as a test, as answer material for a test, or as an atlas, if the parties expressly agree in a written instrument signed by them that the work shall be considered a work made for hire." It generally would not cover a computer program work, though it might in the case of things such as a translation (e.g., rewriting a computer program into another computer language), or the audiovisual work generated by a computer program (e.g., displays of a video game). If a work does not fall within one of the enumerated categories, it simply cannot qualify as a "work made for hire" under § 101(2). *NIMMER*, *supra* note 2, § 5.03[B][2][a], at 5-31 and cases cited therein at note 119; *also see* *CCNV*, 490 U.S. at 738 ("Sculpture does not fit within any of the nine categories of 'specially commissioned' works enumerated in that subsection, and no written agreement between the parties establishes *Third World America* as a work for hire.").

68. *See* *CCNV*, 490 U.S. at 739-40 (describing these four separate interpretations applied by the courts).

69. *CCNV*, 490 U.S. at 751.

70. *CCNV*, 490 U.S. at 740-41.

factors to be considered which included the hiring party's right to control creation of the work, the skill required by the party creating the work, which party supplied the things used to create the work, at which party's location the work was created, the duration of the relationship between the parties, whether the hiring party has the right to assign additional projects to the hired party, the extent of the hired party's discretion over when and how long to work, the method of payment, the hired party's role in hiring and paying assistants, whether the work is part of the regular business of the hiring party, whether the hiring party is in business, whether employee benefits are given to the hired party, the tax treatment of the hired party, and the additional factors set out in § 220 of the Restatement of Agency.⁷¹

To avoid this issue, whenever an employer retains a person to create a work and that person is not a regular, salaried employee, if the employer believes that the work will be one made for hire, that should be stated in the agreement. The agreement should also provide that the creator of the work assigns to the employer all right (including all copyright rights), title and interest that he/she may have under operation of law or otherwise.

2. Joint Authors & Joint Works

Ignoring for the moment 'works made for hire,' under *CCNV* a person is an author of a work only when that person contributes copyrightable subject matter to the work. That is, to be an author, one must supply more than mere direction or ideas: one must "translate an idea into a fixed, tangible expression entitled to copyright protection."⁷² A joint work is defined as "a work prepared by two or more authors with the intention that their contributions be merged into inseparable or interdependent parts of a unitary whole."⁷³ Thus, there are two critical elements of a joint work.

71. *CCNV*, 490 U.S. at 752 and n.31. The factors set out in § 220 of the RESTATEMENT OF AGENCY include: (a) the extent of control which, by the agreement, the master may exercise over the details of the work; (b) whether or not the one employed is engaged in a distinct occupation or business; (c) the kind of occupation, with reference to whether, in the locality, the work is usually done under the direction of the employer or by a specialist without supervision; (d) the skill required in the particular occupation; (e) whether the employer or the workman supplies the instrumentalities, tools and the place of work for the person doing the work; (f) the length of time for which the person is employed; (g) the method of payment whether by the time or by the job; (h) whether or not the work is a part of the regular business of the employer; (i) whether or not the parties believe they are creating the relation of master and servant; and (j) whether the principal is or is not in business.

72. *CCNV*, 490 U.S. at 737.

73. 17 U.S.C. § 101.

First, there must be at least two authors; that is, at least two persons contributing copyrightable expression, not just mere ideas.⁷⁴ Second, the contributions must have been made while the authors had "the intention that their contributions be merged into inseparable or interdependent parts of a unitary whole."⁷⁵ Joint authors of a joint work are "co-owners of copyright in the work."⁷⁶ "Each co-author automatically becomes a holder of an undivided interest in the whole."⁷⁷ For example, each co-author has an equal right to exercise all the exclusive rights of a copyright owner set out in 17 U.S.C. § 106 such as the right to modify, reproduce, or distribute copies of the work.⁷⁸

a. Two Authors

In *S.O.S. Inc. v. Payday Inc.*,⁷⁹ the Ninth Circuit held that a person who "told the programmers what tasks the software was to perform and how it was to sort data,"⁸⁰ "describe[d] the sort of programs" to be written, but "did none of the coding" and was not an author and thus the program was not a joint work of that person and the programmer.⁸¹ Under *CCNV*, to be an author, one must supply more than mere direction or ideas: one must "translate an idea into a fixed, tangible expression entitled to copyright protection."⁸² In other words, as stated in a subsequent Ninth Circuit case, "joint authorship requires each author to make an independently copyrightable contribution."⁸³ Thus, according to the *S.O.S.*

74. The requirement is that the putative author contribute copyrightable expression, not that he actually was the one to fix that expression in a tangible medium of expression. More specifically, the Third Circuit recently ruled that an individual qualifies as an author of a work—or one author of a joint work—when he originates copyrightable expression for the work, and another person acting under his authority actually fixes the expression in a tangible medium. *Andrien v. Southern Ocean County Chamber of Commerce*, 927 F.2d 132, 135, 18 U.S.P.Q.2d 1041, 1044 (3rd Cir. 1991). The Third Circuit reasoned that § 101 of the Copyright Act defines a work as fixed in a tangible medium of expression when "its embodiment in a copy . . . by or under the authority of the author, is sufficiently permanent." Thus, it is adequate that the expression was fixed "by" the putative author or "under . . . [his] authority."

75. 17 U.S.C. § 201(a); 886 F.2d 1081, 1086-87.

76. *Id.*

77. *Pye v. Mitchell*, 574 F.2d 476, 480 (9th Cir. 1978).

78. 17 U.S.C. § 106(1)-(3), construed in *S.O.S. Inc. v. Payday Inc.*, 886 F.2d 1081, 1086, 12 U.S.P.Q.2d 1241 (9th Cir. 1989) (Stating that, "As a joint author, Payday (through Goodman) would be entitled to modify, reproduce, or distribute copies of the work.")

79. 886 F.2d 1081, 12 U.S.P.Q.2d 1241 (9th Cir. 1989).

80. *Id.* at 1086-87, 12 U.S.P.Q.2d at 1244-45.

81. *Id.* at 1087, 12 U.S.P.Q.2d at 1245.

82. *CCNV*, 490 U.S. at 737.

83. *Ashton-Tate Corp. v. Ross*, 916 F.2d 516, 521, 16 U.S.P.Q.2d 1541 (9th Cir. 1990). The Ninth Circuit recognized, however, that at least one commentator (NIMMER, *supra* note

court, "[a] person who merely describes to an author what the commissioned work should do or look like is not a joint author for purposes of the Copyright Act."⁸⁴ "The supplier of an idea is no more an author of a program than is the supplier of the disk on which the program is stored."⁸⁵

A claim of joint authorship was also rejected in *Whelan Assocs., Inc. v. Jaslow Dental Laboratory, Inc.*⁸⁶ In *Whelan*, a dental laboratory owner commissioned the design of software for use in his business. The owner argued that he was a joint author because he "originated the concept of developing an overall computer program that could accommodate the business needs of a dental laboratory," he "disclosed to . . . [the programmer] in detail the operation and methods of . . . [his business]," he "explained to . . . [the programmer] the functions to be performed by the computer," he "helped design the language and format of some of the screens that would appear on the computer's visual displays", and he gained "extensive knowledge and understanding of computers . . . and therefore gave valuable assistance to . . . [the programmer]."⁸⁷ The court nonetheless found that the programmer was the sole author of the program. Concentrating principally on the creation of the code,⁸⁸ the court held that the owner's "general assistance and contribution to the fund of knowledge of the author did not make [him] a creator of any original work, nor even the co-author."⁸⁹ The court drew an analogy to an owner explaining to an architect the type and functions of a building the architect is to design for the owner, where courts have held that the architectural drawings are not co-authored by the owner, no matter how detailed the ideas and limitations expressed by the owner.⁹⁰

2, § 6.07 at 6-18) and at least one other circuit (D.C. Circuit) have taken the position that one might be the author of a joint work by making significant contributions even if they are not independently copyrightable. *Id.* Another circuit (Third Circuit) recently acknowledged that the test for joint authorship remains unresolved, stating that "[a]t this point we need not decide whether each author of a joint work must make an independently copyrightable contribution." *Andrien v. Southern Ocean County Chamber of Commerce*, 927 F.2d 132, 135 18 U.S.P.Q.2d 1041, 1044 (3rd Cir. 1991).

84. 886 F.2d at 1087, 12 U.S.P.Q.2d at 1245.

85. *Id.*

86. 609 F. Supp. 1307, 1318-19, 225 U.S.P.Q. 156 (E.D.Pa. 1985), *aff'd*, *Whelan Assocs., Inc. v. Jaslow Dental Lab., Inc.*, 797 F. 2d 1222, 230 U.S.P.Q. 481 (3d Cir. 1986).

87. *Id.*

88. If the court had concentrated on the screens, the result may have been different.

89. *Whelan*, 609 F. Supp. at 1318-19.

90. *See e.g. Aitken, Hazen, Hoffman, Miller, P.C. v. Empire Constr. Co.*, 542 F. Supp. 252, 218 U.S.P.Q. 409 (D. Neb. 1982).

In *Ashton-Tate Corp. v. Ross*,⁹¹ the district court found that Ross' only contribution to an interface for a spreadsheet program consisted of a handwritten list of suggested commands. Ross argued that the list was utilized in developing the final list of user commands for the spreadsheet interface.⁹² Ross further argued that the list was expression which he contributed to the interface, rendering the interface a joint work. The court disagreed. The court noted that code (object and source) is expression. But Ross contributed no code. The court indicated that implementation of the commands might be expression. But Ross did not participate in the implementation of the commands. The court explained that the commands contributed by Ross were "only a list of labels for user commands, many of which are common commands that were already available on other software programs" and that "[t]here was nothing innovative or novel about the labels that Ross proposed . . . or the order in which they are listed on the document."⁹³ But that misses the mark. Novelty is not a requirement, only originality.⁹⁴ The court concluded that "[a]ll Ross gave to . . . [the programmer] was a list of commands he thought should be included in the program" and that "Ross merely told . . . [the programmer] what tasks he believed the interface should allow the user to perform." However, according to the court, "[t]he list of commands is only an idea that is not protected under federal law." Thus, the interface portion of the spreadsheet program was not a joint work.

Ross appealed and the Ninth Circuit affirmed.⁹⁵ On appeal, he reiterated his argument that "the handwritten list of user commands . . . was a fixed expression of Ross' ideas," but the Ninth Circuit held that argument to be "meritless for the reasons given in the district court's order"; to wit, "[t]he list simply does not qualify for copyright protection."⁹⁶ Ross also argued on appeal that joint authorship can be based on "an alleged agreement to collaborate combined with his noncopyrightable contributions to the interface."⁹⁷ The Ninth Circuit disagreed, stating that "our circuit holds that joint authorship requires each author to make an inde-

91. 728 F. Supp. 597, 12 U.S.P.Q.2d 1734 (N.D. Cal. 1989), *aff'd* Ashton-Tate Corp. v. Ross, 916 F.2d 516, 16 U.S.P.Q.2d 1541 (9th Cir. 1990).

92. *Id.* at 601-02, 12 U.S.P.Q.2d at 1736-37.

93. *Id.*

94. *See e.g.* Feist Publications, Inc. v. Rural Tel. Service Co., 113 L.Ed.2d 358, 111 S.Ct. 1282 (1991).

95. *Ashton-Tate Corp. v. Ross*, 916 F.2d 516, 16 U.S.P.Q.2d 1541 (9th Cir. 1990).

96. *Ashton-Tate*, 916 F.2d at 521-22.

97. *Ashton-Tate*, 916 F.2d at 520-21.

pendently copyrightable contribution."⁹⁸

b. The Intent Requirement

As noted above, a joint work is defined as "a work prepared by two or more authors with the intention that their contributions be merged into inseparable or interdependent parts of a unitary whole."⁹⁹ The "touchstone . . . [of a joint work] is the intention, *at the time the writing is done*, that the parts be absorbed or combined into an integrated unit."¹⁰⁰ It is therefore crucial that a person asserting that a particular work is a joint work demonstrate that at the time he created his contribution he intended that his contribution be merged with a contribution of another into a unitary whole.¹⁰¹ If his work is written "with the intention that [his] contribution . . . be merged into inseparable or interdependent parts of a unitary whole,"¹⁰² then merger of his contribution with that of another creates a joint work. But if such intention occurs only after his contribution has been completed, then the merger results in either a derivative work or a compilation,¹⁰³ in which case each contributing author only owns his contribution and has no rights in the contributions of the other author.¹⁰⁴

98. *Ashton-Tate*, 916 F.2d at 521. *But see supra* note 83 discussing the view in other circuits that one might be the author of a "joint work" by making significant contributions even if they are not independently copyrightable.

99. 17 U.S.C. § 101.

100. HOUSE REPORT, *supra* note 10, at 120; Aitken, Hazen, Hoffman, Miller P.C. v. Empire Const. Co., 542 F. Supp. 252, 258-59, 218 U.S.P.Q. 409 (D. Neb. 1982).

101. *See, e.g.*, Aitken, Hazen, Hoffman, Miller P.C. v. Empire Const. Co., 542 F. Supp. 252, 260, 218 U.S.P.Q. 409 (D. Neb. 1982).

102. 17 U.S.C. § 101.

103. The terms derivative work, compilation and collective work are each defined in § 101 of the 1976 Act. A derivative work is defined as "a work based upon one or more preexisting works, such as a translation . . . or any other form in which a work may be recast, transformed or adapted." A compilation is defined as "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" and "includes collective works." A collective work, which is a type of compilation, is defined as "a work, such as a periodical issue, anthology, or encyclopedia, in which a number of contributions, constituting separate and independent works in themselves, are assembled into a collective whole."

104. 17 U.S.C. § 103 (b) ("The copyright in a compilation or derivative work extends only to the material contributed by the author of such work, as distinguished from the preexisting material employed in the work, and does not imply any exclusive right in the preexisting material. The copyright in such work is independent of, and does not affect or enlarge the scope, duration, ownership, or subsistence of, any copyright protection in the preexisting material.").

V. INFRINGEMENT ISSUES

A. *The Fundamentals Of A Copyright Infringement Determination*

To prove that an accused work infringes the copyright in a copyrighted work, the plaintiff must prove ownership of a valid copyright, and *unlawful* (illicit) *copying* by the defendant of the copyrighted work.¹⁰⁵ Where a plaintiff proves infringement, the defendant may nevertheless avoid liability by establishing the existence of an affirmative defense. An affirmative defense, such as copyright misuse, renders the copyright unenforceable at least as against the particular defendant.¹⁰⁶ Ownership and affirmative defense issues are discussed later on in this writing. Here we concentrate on defining the metes and bounds of unlawful copying.

Unlawful copying is generally shown by establishing that the defendant had access to the copyrighted work before creating his work, raising the inference that similarities between the two works are due to copying (as opposed to independent creation); *and* that the two works are substantially similar, that is, that the copying amounted to an appropriation.¹⁰⁷ In the rarest of cases, a defendant can avoid infringement by showing that despite access and substantial similarity, he independently created the work—that is, while he had access, he did not copy from the copyrighted work because, for example, he did not actually examine the copyrighted work and/or the substantial similarity is due to other factors such as use of a common design known from prior experience.¹⁰⁸

105. *Data East USA, Inc. v. Epyx, Inc.*, 862 F.2d 204, 206, 9 U.S.P.Q.2d 1322 (9th Cir. 1988); *Johnson Controls, Inc. v. Phoenix Control Sys., Inc.*, 886 F.2d 1173, 1175, 12 U.S.P.Q.2d 1566 (9th Cir. 1989); *Narell v. Freeman*, 872 F.2d 907, 910, 10 U.S.P.Q.2d 1596 (9th Cir. 1989); *Apple Computer, Inc. v. Microsoft Corp.*, 18 U.S.P.Q.2d 1097, 1103 (N.D. Cal. 1991); *NEC Corp. v. Intel Corp.*, 10 U.S.P.Q.2d 1177, 1183 (N.D. Cal. 1989); *Whelan Assocs., Inc. v. Jaslow Dental Lab., Inc.*, 797 F. 2d 1222, 1231 and 1232, 230 U.S.P.Q. 481 (3d Cir. 1986).

106. *Lasercomb America, Inc. v. Reynolds*, 911 F.2d 970, 15 U.S.P.Q.2d 1846 (4th Cir. 1990).

107. *Data East USA, Inc. v. Epyx, Inc.*, 862 F.2d 204, 206, 207, 9 U.S.P.Q.2d 1322 (9th Cir. 1988); *Johnson Controls, Inc. v. Phoenix Control Sys., Inc.*, 886 F.2d 1173, 1176, 12 U.S.P.Q.2d 1566 (9th Cir. 1989); *Narell v. Freeman*, 872 F.2d 907, 912-13, 10 U.S.P.Q.2d 1596 (9th Cir. 1989); *Apple Computer, Inc. v. Microsoft Corp.*, 18 U.S.P.Q.2d 1097, 1103 (N.D. Cal. 1991); *NEC Corp. v. Intel Corp.*, 10 U.S.P.Q.2d 1177, 1183 (N.D. Cal. 1989); *Whelan Assocs., Inc. v. Jaslow Dental Lab., Inc.*, 797 F. 2d 1222, 1231, 230 U.S.P.Q. 481 (3d Cir. 1986).

108. *Keeler Brass Co. v. Continental Brass Co.*, 862 F.2d 1063, 1065-67, 9 U.S.P.Q.2d 1331 (4th Cir. 1988) (the evidence of independent creation which led the district court to find no infringement, a finding affirmed on appeal, was (1) testimony by the defendant "that he did not copy the initial drawing; that he did not use it during the design process; that he

Access means "an opportunity to view or to copy plaintiff's work,"¹⁰⁹ and thus may be established by showing that the defendant had a reasonable opportunity to actually view the plaintiff's work, or that the defendant actually acquired a copy of the plaintiff's work.¹¹⁰ In most software infringement cases, access is either admitted or easily established so that a finding of infringement turns entirely on whether the accused program is substantially similar to the copyrighted program.¹¹¹

Not all copying from a copyrighted work is unlawful. Therefore, contrary to what many plaintiff's urge, direct evidence of copying does not eliminate the need to show substantial similarity between the accused and copyrighted works.¹¹² A plaintiff cannot prevail unless he establishes that the two works are substantially similar.¹¹³

A uniform standard for determining substantial similarity in computer program cases is desperately needed. At present, the courts decide cases on an ad hoc basis, applying seemingly inconsistent tests.¹¹⁴ Rather than delve into the details of each case and the test applied therein, it is more productive here to attempt to locate a common thread among the cases. A comprehensive study of the cases reveals that in virtually all jurisdictions, the courts in essence perform a three-step process. First, the court must identify specific similarities between the two programs. That is generally an easy task since the plaintiff typically presents a detailed list of every con-

created his design from his prior experience in the marketplace, which included knowledge of the primary design element in both drawings—the Chinese key, a common design element from antiquity"; and (2) "significant dissimilarities between the two drawings"). Technically, proof of access and substantial similarity combine only to create a presumption of illegal copying. *Id.* at 1065. The defendant may rebut the presumption with evidence of independent creation. *Id.* While some courts have indicated that independent creation is an affirmative defense upon which defendant bears the burden of proof, other courts have held that independent creation is not an affirmative defense; that a defendant therefore does not have the burden of proving independent creation, that defendant's burden is merely one of coming forward with sufficient evidence to rebut the presumption (i.e., create a triable issue); and if defendant meets that burden, the ultimate burden of proof remains with plaintiff to prove that the substantial similarity is due to copying. *Id.* at 1065-67 (recognizing cases indicating the contrary, but holding that "independent creation" is not an affirmative defense").

109. *Kamar Int'l, Inc. v. Russ Berrie & Co.*, 657 F.2d 1059, 1062, 216 U.S.P.Q. 376 (9th Cir. 1981).

110. *Sid & Marty Krofft Television Prods., Inc. v. McDonald's Corp.*, 562 F.2d 1157, 196 U.S.P.Q. 97 (9th Cir. 1977).

111. *NIMMER*, *supra* note 2, § 13.03[F].

112. *Narell v. Freeman*, 872 F.2d 907, 910, 10 U.S.P.Q.2d 1596 (9th Cir. 1989).

113. *Id.*

114. See *NIMMER*, *supra* note 2, § 13.03[A][1][c] and [d] (describing the various tests enunciated or applied by various courts in various circuits).

ceivable similarity as part of its case in chief. Second, it is necessary to eliminate from the list any similarities in uncopyrightable (unprotectible) elements of the copyrighted program. This elimination process, called filtering by one commentator,¹¹⁵ is discussed in section 1 below. Third, the remaining similarities—similarities in protectable expression—must be examined to determine whether they are substantial to the copyrighted program, thereby rendering the programs substantially similar. This is discussed in section 2 below.

1. Filtering Out The Unprotected Elements

It is axiomatic that copyright law protects only the expression of an idea, not the idea, itself.¹¹⁶ That axiom has been substantially codified in § 102(b) of the 1976 Act which provides that “[i]n 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.”¹¹⁷ Section 102(b) was specifically included in the 1976 Act “to make clear that the expression adopted by the programmer is the copyrightable element in a computer program, and that the actual processes or methods embodied in the program are not within the scope of copyright law.”¹¹⁸ Thus unprotected ideas need to be filtered out.¹¹⁹

Furthermore, copyright protection is not “afforded to elements of expression that necessarily follow from an idea” and are “as a practical matter, indispensable or at least standard in the treatment of a given [idea].”¹²⁰ Copyright laws do not protect expression dictated by the underlying subject matter.¹²¹ To do otherwise, would effectively extend protection to the idea. In these instances,

115. NIMMER, *supra* note 2, § 13.03[F] at 13-62.

116. NEC Corp. v. Intel Corp., 10 U.S.P.Q.2d 1177, 1179 (N.D. Cal. 1989).

117. 17 U.S.C. section 102(b); *see* NEC Corp. v. Intel Corp., 10 U.S.P.Q.2d 1177, 1179 (N.D. Cal. 1989) (substantial codification).

118. HOUSE REPORT, *supra* note 10, at 57 (comments on 17 U.S.C. § 102). *See* Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240, 1250 (3d Cir. 1983). The HOUSE REPORT further states that the term literary works “. . . also includes computer data bases, and computer programs to the extent that they incorporate authorship in the programmer’s expression of original ideas, as distinguished from the ideas themselves.” HOUSE REPORT, *supra* note 10, at 54 (comments on 17 U.S.C. § 102).

119. NIMMER, *supra* note 2, § 13.03[F][1].

120. Data East USA, Inc. v. EPYX, Inc., 862 F.2d 204, 208, 9 U.S.P.Q.2d 1322 (9th Cir. 1988) (quoting Alioti v. R. Dakin & Co., 831 F.2d 898, 901 (9th Cir. 1987)).

121. *See* Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240, 1250 (3d Cir. 1983); *See* v. Durang, 711 F.2d. 141, 143, 219 U.S.P.Q. 711 (9th Cir. 1983).

the idea and expression are said to have merged.¹²² Thus, "elements of expression that necessarily flow from an idea" must be filtered out as well.

The problem here is that courts generally define the idea of a computer program so broadly that virtually nothing is excluded at this stage. For example, in *Whelan Associates, Inc. v. Jaslow Dental Laboratory, Inc.*,¹²³ the court noted that the purpose or function of a computer program is, of course, an uncopyrightable idea and "anything necessary to effecting that function is also, necessarily, part of the idea, too."¹²⁴ But the court went on to define the idea of the copyrighted program as "to aid the business operations of a dental laboratory"¹²⁵ and "efficient organization of a dental laboratory."¹²⁶ Everything else was protected expression, not the idea.¹²⁷

Similarly, in *Apple Computer, Inc. v. Franklin Computer Corp.*,¹²⁸ the Third Circuit held that "[i]f other programs can be written or created which perform the same function as an Apple's operating system program, then that program is an expression of an idea . . .," and broadly defined the function (or idea) of Apple's

122. *Herbert Rosenthal Jewelry Corp. v. Kalpakian*, 446 F.2d 738, 742, 170 U.S.P.Q. 557 (9th Cir. 1971) ("When the 'idea' and its 'expression' are thus inseparable, copying the 'expression' will not be barred, since protecting the 'expression' would confer a monopoly of the 'idea' upon the copyright owner free of the conditions and limitations imposed by the patent law."); *Johnson Controls, Inc. v. Phoenix Control Sys., Inc.*, 886 F.2d 1173, 1175, 12 U.S.P.Q.2d 1566 (9th Cir. 1989) ("Where an idea and the expression 'merge,' or are 'inseparable,' the expression is not given copyright protection.").

123. 797 F.2d 1222, 230 U.S.P.Q. 481 (3d Cir. 1986).

124. *Id.* at 1236.

125. *Id.* at 1238.

126. *Id.* at 1240.

127. The *Whelan* court concluded:

the structure of the program was not essential to that task: there are other programs on the market, competitors of Dentalab and Dentcom, that perform the same function but have different structures and design.

Id. at 1238.

The court did, however, state:

We do not mean to imply that the idea or purpose behind every utilitarian or functional work will be precisely what it accomplishes, and that the structure and organization will therefore always be part of the expression of such works. The idea or purpose behind a utilitarian work may be to accomplish a certain function in a certain way, see e.g., *Baker v. Selden*, 101 U.S. at 100 (referring to Selden's book as explaining "a peculiar system of book-keeping"), and the structure or function of a program might be essential to that task. There is no suggestion in the record, however, that the purpose of the Dentalab program was anything so refined; it was simply to run a dental laboratory in an efficient way.

Id. at 1238 n.34.

128. 714 F.2d 1240, 1253, 219 U.S.P.Q. 113 (3d Cir. 1983).

operating system program as "to translate source code into object code." Everything else was protected expression, not the idea.

Likewise, in *Lotus Dev. Corp. v. Paperback Software Int'l*,¹²⁹ the idea was broadly defined as "a computer program for an electronic spreadsheet."

2. Substantial Similarity

Once unprotectible similarities have been filtered out, a determination must be made whether or not the remaining similarities are substantial to the copyrighted program. This is a *qualitative*, not quantitative, analysis.¹³⁰ It is here that the courts apply widely diverse standards.

In copyright disputes involving traditional works such as the fanciful costumed characters in a juvenile television show, the audiovisual displays of an electronic game, or even the user interface (screen displays) for a graphics program, the Ninth Circuit has applied a subjective, intrinsic test in which infringement is found where the ordinary, reasonable, lay observer finds the 'total concept and feel' of the two works to be substantially similar.¹³¹ The Ninth Circuit has also applied this standard in computer program cases.¹³²

The Third Circuit concluded "that the ordinary observer test is not useful and is potentially misleading when the subjects of the copyright are particularly complex, such as computer programs."¹³³ The court explained they "do not apply the ordinary observer test in copyright cases involving exceptionally difficult materials, like computer programs."¹³⁴ In its place, some courts have relied exclusively on expert testimony, looking at similarities and differences

129. 740 F. Supp. 37, 15 U.S.P.Q.2d 1577, 1597 (D. Mass. 1990).

130. *Whelan Assocs., Inc. v. Jaslow Dental Lab., Inc.*, 797 F.2d 1222, 1245-46, 230 U.S.P.Q. 481 (3rd Cir. 1986).

131. *Sid & Marty Krofft Television Prods., Inc. v. McDonald's Corp.*, 562 F.2d 1157, 1164, 196 U.S.P.Q. 97 (9th Cir. 1977) (fanciful costumed characters in a juvenile television show); *Data East USA, Inc. v. Epyx, Inc.*, 862 F.2d 204, 208, 9 U.S.P.Q.2d 1322 (9th Cir. 1988) (audiovisual displays of an electronic game); *Atari, Inc. v. Amusement World, Inc.*, 547 F. Supp. 222, 215 U.S.P.Q. 929 (D. Md. 1981) (same); *Broderbund Software, Inc. v. Unison World, Inc.*, 648 F. Supp. 1127, 1136-37, 231 U.S.P.Q. 700 (N.D. Cal. 1986) (user interface or screen displays for a graphics program); *Digital Communications Assocs., Inc. v. Softklone Distrib. Corp.*, 659 F. Supp. 449, 465, 2 U.S.P.Q.2d 1385 (N.D. Ga. 1987) (main menu or status screen for communications software); *Narell v. Freeman*, 872 F.2d 907, 913, 10 U.S.P.Q.2d 1596 (9th Cir. 1989).

132. *Johnson Controls, Inc. v. Phoenix Control Sys., Inc.*, 886 F.2d 1173, 1175-76, 12 U.S.P.Q.2d 1566 (9th Cir. 1989).

133. *Whelan Assocs., Inc. v. Jaslow Dental Lab., Inc.*, 797 F.2d 1222, 1231, 230 U.S.P.Q. 481 (3d Cir. 1986).

134. *Id.*

between the programs, but still requiring a conclusion that the accused product capture the 'total concept and feel' of the copyrighted program for the two programs to be substantially similar.¹³⁵ Another court relied exclusively on expert testimony and totally abandoned the 'total concept and feel' standard, looking solely at the "'quantitative and qualitative evidence of the similarities' as gauged by the Court's evaluation of expert testimony."¹³⁶ The court applied "a single substantial similarity inquiry according to which both lay and expert testimony would be admissible."¹³⁷ But whatever standard is applied, the inquiry boils down to "a value judgment, involving an assessment of the importance of the material copied."¹³⁸

*a. The Fewer The Ways Of Expressing An Idea,
The Closer The Similarity Must Be To Be
Deemed Substantial*

There are times where there are only a limited number of ways of expressing an idea. An example may be a short microinstruction routine subject to significant hardware constraints. In such case, the idea and expression have not merged since the idea (function) of the routine can be expressed in a number of different ways (different microroutines). Nevertheless, because of the limited number of ways of expressing the idea, the courts find no substantial similarity absent "virtually identical copying."¹³⁹ Thus, it can be seen that the fewer the methods of expressing an idea, the more the allegedly infringing work must resemble the copyrighted work in order to

135. Pearl Sys., Inc. v. Competition Elecs., Inc., 8 U.S.P.Q.2d 1520-24 (S.D. Fla. 1988) (conclusion #3).

136. E.F. Johnson Co. v. Uniden Corp. of America, 623 F. Supp. 1485, 1493, 228 U.S.P.Q. 891 (D. Minn. 1985) ("the fact finder's focus shifts from the hypothetical ordinary observer's impression of the 'total concept and feel' of the copyrighted and allegedly infringing works to an analysis of the 'quantitative and qualitative evidence of the similarities' as gauged by the Court's evaluation of expert testimony. The fiction of the lay observer is thus abandoned in favor of an analysis of similarities and differences in the copyrighted and allegedly offending computer programs.").

137. *Id.*

138. NIMMER, *supra* note 2, § 13.03[F][5] at 13-74.

139. Frybarger v. Int'l Business Machs. Corp., 812 F.2d 525, 530, 2 U.S.P.Q.2d 1135 (9th Cir. 1987) (video game; no infringement); NEC Corp. v. Intel Corp., 10 U.S.P.Q.2d 1177, 1188-89 (N.D. Cal. 1989) (microcode for controlling microprocessor; no infringement); Landsberg v. Scrabble Crossword Game Players, Inc., 736 F.2d 485, 488, 221 U.S.P.Q. 1140 (9th Cir. 1984) (Scrabble strategy book; no infringement); Cooling Sys. & Flexibles, Inc. v. Stuart Radiator, Inc., 777 F.2d 485, 491-92, 228 U.S.P.Q. 275 (9th Cir. 1985) (Radiator catalog; no infringement).

establish substantial similarity.¹⁴⁰

B. Copying The Literal Code Of A Program —Source, Object, Machine

In *Apple Computer, Inc. v. Franklin Computer Corp.*,¹⁴¹ Apple sold its popular Apple II personal computer with operating system programs embedded in computer memory chips called ROMs (Read Only Memory). Franklin copied the object code into its "Apple-compatible" computer called the ACE 100. Franklin argued that while a computer program's source code, written in a high level computer language and meant to be read by humans, is copyrightable, the object code, which is a series of binary digits for execution by a machine, is not copyrightable and could therefore be freely copied.¹⁴² The Court rejected that argument, finding that the object code, which falls squarely within the definition of a computer program in the 1976 Act, is a copyrightable literary work under the Act.¹⁴³ Franklin also argued that while a program on a computer printout may be copyrightable, a program embedded in a computer's memory such as a ROM is not copyrightable and can be freely copied because the memory is a utilitarian object or machine part. The Court rejected that argument finding that a program stored in a ROM is "fixed in any tangible medium of expression" and that is all the 1976 Act requires.¹⁴⁴ Finally, Franklin argued that while applications programs which perform a particular task for the computer user such as word processing may be copyright-

140. *Landsberg v. Scrabble Crossword Game Players, Inc.*, 736 F.2d. 485, 488, 221 U.S.P.Q. 1140 (9th Cir. 1984).

141. 714 F.2d 1240, 219 U.S.P.Q. 113 (3rd Cir. 1983).

142. In *Williams Elecs., Inc. v. Artic Int'l, Inc.*, 685 F.2d 870, 876 n.7, 215 U.S.P.Q. 405 (3rd Cir. 1982), the Court quoted the definitions of source code and object code in the CONTU Final Report:

A source code is a computer program written in any of several programming languages employed by computer programmers. An object code is the version of a program in which the source code language is converted or translated into the machine language of the computer with which it is to be used.

143. The 1976 Act, as amended in 1980, defines a computer program as "a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result." 17 U.S.C. § 101. The 1976 Act defines literary works as "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." 17 U.S.C. § 101.

144. The 1976 Act provides that "Copyright protection subsists . . . 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." 17 U.S.C. § 102(a).

able, operating systems programs which generally manage the internal operations of the computer are an uncopyrightable "process, system, [or] method of operation"¹⁴⁵ or "purely utilitarian work."¹⁴⁶ The Court rejected these arguments as well, finding that an operating system program copyright protects the instructions which control the computer's operation, not the process, system or method of operation of the computer; and that the use of a copyrightable work in a useful article, such as a computer, does not negate copyrightability as illustrated by the definition of a computer program in the Act which covers "a set of . . . instructions . . . used directly . . . in a computer . . . to bring about a certain result."¹⁴⁷

In other cases the defendant has made similar arguments but from a slightly different perspective. In *Apple*, Franklin argued that what it copied was not copyrightable such that, Franklin could copy Apple's object code program from a ROM because the program in that form was not protectable under the copyright laws. But in an earlier case, *Williams Electronics, Inc. v. Artic International, Inc.*,¹⁴⁸ the defendant also argued that use of a copyrighted program in a utilitarian way to control a machine was not a copy of the copyrighted program within the meaning of the 1976 Act and thus not an act of infringement.¹⁴⁹ That argument was rejected based on the definition of copy in the 1976 Act, namely, "material objects . . . 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*."¹⁵⁰

In *NEC Corp. v. Intel Corp.*,¹⁵¹ the Court held that Intel's microcodes for its 8086 and 8088 microprocessors were copyright-

145. The 1976 Act provides that "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." 17 U.S.C. § 102(b) (emphasis added). The Legislative History to the 1976 Act explains that "Section 102(b) is intended, among other things, to make clear that the expression adopted by the programmer is the copyrightable element in a computer program, and that the actual processes or methods embodied in the program are not within the scope of copyright law." HOUSE REPORT, at 57 (comments on 17 U.S.C. § 102).

146. The argument that purely utilitarian works are not copyrightable stems from an early Supreme Court case. *Baker v. Selden*, 101 U.S. 99, 25 L.Ed. 841 (1880).

147. See *supra* note 139 and accompanying text.

148. 685 F.2d 870, 215 U.S.P.Q. 405 (3rd Cir. 1982).

149. The 1976 Act gives the copyright owner the exclusive right to make and distribute copies of a copyrighted work in the U.S. 17 U.S.C. § 106(1)&(3).

150. 17 U.S.C. § 101 (emphasis added).

151. 10 U.S.P.Q.2d 1177 (N.D. Cal. 1989).

able.¹⁵² NEC had argued that the microprocessor was a computer comprised of circuitry and the microcode. Thus, the microcode was a defining element or defining part of the computer, rather than instructions used in the computer. Therefore, the microcode was not a computer program within the meaning of the Act which defined that term as "a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result."¹⁵³ Hence, microcode was not copyrightable. The Court disagreed. It defined the microprocessor (computer) as the circuitry. It then defined the microcode as that which "consists of a series of instructions that tell a microprocessor which of its thousands of transistors to actuate in order to perform the tasks directed by the macroinstruction set" and "[a]s such, it comes squarely within the definition of a computer program."¹⁵⁴ Once that had been decided, the Court merely noted that there is nothing in the Act which suggests a different result concerning copyrightability for different types of computer programs based upon the function they serve within the machine.¹⁵⁵ The Court could have avoided NEC's quasi-semantic argument centering around whether the microcode was part of the computer (and thus not a computer program) or was instructions to the computer (and thus was a computer program), by simply noting that the microcode was copyrightable as a literary work whether or not it fell squarely within the definition of a computer program.¹⁵⁶

In summary, the *Apple*, *Williams* and *NEC* trilogy of cases firmly establish that the literal code (literal manifestations) of a computer program is copyrightable in any form (e.g., high level source code, object code), used for any purpose (e.g., applications programs, operating systems programs, and microcode), and fixed in any medium (e.g., paper or ROMs).¹⁵⁷

152. The Court defined microcode as follows: "A microcode consists of a series of instructions that tell a microprocessor which of its thousands of transistors to actuate in order to perform the tasks directed by the macroinstruction set." *Id.* at 1178.

153. 17 U.S.C. § 101.

154. *Id.* at 1178.

155. *Id.* at 1179.

156. Recall that the 1976 Act defines literary works as including "works . . . expressed in . . . numbers . . . regardless of the nature of the material objects . . . in which they are embodied." 17 U.S.C. § 101. Another case to hold that microcode is copyrightable is *Allen-Myland, Inc. v. Int'l Business Machs. Corp.*, 746 F. Supp. 520, 531, 16 U.S.P.Q.2d 1817 (E.D. Pa. 1990) (microcode for IBM 3090 mainframe computers is copyrightable subject matter).

157. *Johnson Controls, Inc. v. Phoenix Control Sys., Inc.*, 886 F.2d 1173, 1175, 12 U.S.P.Q.2d 1566 (9th Cir. 1989) ("Source and object code, the literal components of a program, are consistently held protected by a copyright on the program."); *Whelan Assocs., Inc. v. Jaslow Dental Lab., Inc.*, 797 F.2d 1222, 1234, 230 U.S.P.Q. 481 (3rd Cir. 1986) (court

Early copyists copied all the literal code from a copyrighted program. Literal copying of virtually all of the copyrighted code will result in a substantially similar program.¹⁵⁸ The direct descendants of these pioneering copyists copied only a qualitatively important portion of the copyrighted code, such as some of the most important subroutines. Since substantial similarity is a *qualitative*, not quantitative, analysis,¹⁵⁹ such copying has resulted in a substantially similar, infringing program.¹⁶⁰

C. *Infringement By Porting Or Translating The Literal Code*

The fact that a copyrighted program written in one computer language to run on one type of computer is rewritten in another computer language to run on a different computer will not save the translated program from being an infringement. For example, in *SAS Institute, Inc. v. S & H Computer Systems, Inc.*,¹⁶¹ the court held that plaintiff's copyright in its statistical analysis program for use on IBM-compatible computers was infringed by defendant's program for use on DEC VAX computers. Likewise, in *Whelan Associates, Inc. v. Jaslow Dental Laboratory, Inc.*,¹⁶² the court held that plaintiff's copyright in a program written in EDL for an IBM Series One Computer was infringed by defendant's program written in Basic for an IBM PC. Similarly, in *E.F. Johnson Co. v. Uniden Corp. of America*,¹⁶³ the Court held that plaintiff's copyright in a program written in Intel 8049 microprocessor assembly language was held to be infringed by a translation of the program to Hitachi

evaluating "whether a program's copyright protection covers the structure of the program or only the program's literal elements, *i.e.*, its source and object codes"); *Lotus Dev. Corp. v. Paperback Software Int'l*, 740 F. Supp. 37, 15 U.S.P.Q.2d 1577, 1580 (D.C. Mass. 1990) ("The parties agree, as a general proposition, that literal manifestations of a computer program—including both source code and object code—if original, are copyrightable.").

158. *See, e.g.*, *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240, 1252, 219 U.S.P.Q. 113 (3rd Cir. 1983); *Williams Elecs., Inc. v. Artic Int'l, Inc.*, 685 F.2d 870, 875, 215 U.S.P.Q. 405 (3rd Cir. 1982).

159. *Whelan Assocs., Inc. v. Jaslow Dental Lab., Inc.*, 797 F.2d 1222, 1245-46, 230 U.S.P.Q. 481 (3rd Cir. 1986).

160. *See In re Certain Personal Computers*, 224 U.S.P.Q. 270 (U.S. Int. Tr. Com. 1984) (of the 70 subroutines in the copyrighted program, defendant copied, identically or nearly identically, 23 of the 32 most important subroutines constituting about 18-25% of the copyrighted program); *E.F. Johnson Co. v. Uniden Corp. of America*, 623 F. Supp. 1485, 228 U.S.P.Q. 891 (D. Minn. 1985) (In finding plaintiff's computer program copyright infringed, the court found (among other things) that 38 of 44 subroutines found in plaintiff's program were duplicated in defendant's competing program).

161. 605 F. Supp. 816, 225 U.S.P.Q. 916 (M.D. Tenn. 1985).

162. 797 F.2d 1222, 230 U.S.P.Q. 481 (3d Cir. 1986).

163. 623 F. Supp. 1485, 228 U.S.P.Q. 891 (D. Minn. 1985).

HD63B05X2P microprocessor/assembly language. The copier's program is in essence an infringing derivative work of the copyrighted program, since the former is a translation or adaptation or transformation of the latter.¹⁶⁴

D. *Infringement By Copying The Sequence, Structure And Organization Of The Literal Code*

In *Whelan Associates, Inc. v. Jaslow Dental Laboratory, Inc.*,¹⁶⁵ a case of first impression, the Third Circuit affirmed the trial court finding (after a full trial on the merits) that defendant's dental lab program for dental laboratory record keeping infringed plaintiff's copyright in its dental lab program because the structure, sequence and organization of the two programs (called the "non-literal" elements of the programs) were substantially similar. The structure, sequence and organization of a program is copyrightable subject matter under the copyright laws. Copyright protection is not limited to the source and object codes referred to as the literal elements of the program. While a case of first impression, the *Whelan* decision found support in both the CONTU Final Report and at least one reported decision. The CONTU Final Report stated that flow charts for a program, if sufficiently detailed, would be copyrightable.¹⁶⁶ A flow chart essentially represents the sequence, organization and structure of a computer program. Subsequent courts, relying on the CONTU Report, have indicated that flow charts are copyrightable.¹⁶⁷ Also, one year before *Whelan*, a district court in Tennessee used similarity in structure and organization as one factor in determining substantial similarity.¹⁶⁸ *Whelan* has been fol-

164. The term "derivative work" is defined in the 1976 Act as "a work based upon one or more preexisting works, such as a translation . . . or any other form in which a work may be recast, transformed or adapted." 17 U.S.C. § 101.

165. 609 F. Supp. 1325 (E.D. Pa. 1985), *aff'd* 797 F.2d 1222, 230 U.S.P.Q. 481 (3rd Cir. 1986), *cert. denied* 479 U.S. 1031 (1987).

166. The CONTU Report stated "Flowcharts . . . are works of authorship in which copyright subsists, provided they are the product of sufficient intellectual labor to surpass the 'insufficient intellectual labor hurdle' . . .".

167. In *Lotus Dev. Corp. v. Paperback Software Int'l*, 740 F. Supp. 37, 45, 15 U.S.P.Q.2d 1577 (D. Mass. 1990) the court, citing and quoting from the CONTU Final Report, stated "[a]lso, it appears that flowcharts, if sufficiently detailed and original, are entitled to copyright protection . . ." *Id.* at 45.

168. In *SAS Inst. v. S & H Computer Sys.*, 605 F. Supp. 816, 225 U.S.P.Q. 916 (M.D. Tenn. 1985), following trial, the Tennessee district court held that plaintiff's copyright in its statistical analysis program for use on IBM-compatible computers was infringed by defendant's program for use on DEC VAX computers, and enjoined all future marketing of the infringing program. Defendant licensed plaintiff's program only to obtain the source code to do an IBM-to-DEC conversion, and committed numerous evil acts including the destruction of evidence. The court found substantial similarity in the evidence of: 44 instances of direct

lowed by courts of appeal in other circuits. For example, in *Johnson Controls, Inc. v. Phoenix Control Systems, Inc.*,¹⁶⁹ the Ninth Circuit found that the district court did not err in preliminarily enjoining defendant from marketing its program based on a preliminary finding that the program copied the structure, sequence and organization of plaintiff's copyrighted program and, therefore, was substantially similar to plaintiff's program.¹⁷⁰

E. *An Aberrational Case Providing Hope For The Accused Infringer*

In *Q-CO Industries, Inc. v. Hoffman*,¹⁷¹ plaintiff had a copyrighted teleprompter program, called VPS-500, for use with Atari computers. Two former employees left, hired a third party to create a comparable program, called CPC-1000, for the IBM PC, and one of the employees provided the third party with the vision of the program and other instructions as to how the program should be developed.¹⁷² The court found that the accused CPC-1000 program had a total of four modules "similar in structure and organization, including a few textual similarities" to four corresponding modules in the copyrighted VPS-500 program;¹⁷³ that the organization or ordering of functions and how those functions are performed were similar;¹⁷⁴ and that "[f]rom the similarity of the modules, their structure and function and the obvious availability to Som [defendant] of the VPS-500 program, it is rational to infer that it was used by Som . . . in developing the CPC-1000 program."¹⁷⁵ These findings would seem to have compelled a finding of infringement under *Whelan* and its progeny.¹⁷⁶ The idea would be a teleprompter pro-

copying; much more instances of direct copying before defendant destroyed evidence relating to an earlier version; and admitted copying of the structure and organization or organizational scheme or organization and structural details of the program. *Id.* at 826-30.

169. 886 F.2d 1173, 12 U.S.P.Q.2d 1566 (9th Cir. 1989).

170. *Id.* at 1175-76. The Ninth Circuit stated that "[w]hether the non-literal components of a program, including the structure, sequence and organization and user interface, are protected depends on whether, on the particular facts of each case, the component in question qualifies as an expression of an idea, or an idea itself." *Id.* at 1175. While the Fifth Circuit in *Plains Cotton Coop. v. Goodpasture Computer Serv.*, 807 F.2d 1256, 1 U.S.P.Q.2d 1635 (5th Cir. 1987) "decline[d] to embrace *Whelan*", in fact the decision is consistent with *Whelan*. The *Plains Cotton* court merely found (rightly or wrongly) that to the extent there were similarities in the sequence, organization and structure of the two programs, the idea and expression had merged. *Id.* at 1262.

171. 625 F. Supp. 608, 228 U.S.P.Q. 554 (S.D.N.Y. 1985).

172. *Id.* at 613, 618.

173. *Id.* at 614.

174. *Id.* at 614-15.

175. *Id.* at 615.

176. The court further noted that "[t]here is also a similarity in the terminology used in

gram, and the expression would be the particular sequence, organization and structure. Nevertheless, the court denied a preliminary injunction to the plaintiff, concluding, without elaboration, that “[h]ere it was the idea which was used rather than its expression.”¹⁷⁷

In making its final determination, the court was seemingly influenced by the substantive differences made necessary by the different computers. The court, for example, noted that the two programs were “written in different computer languages”;¹⁷⁸ that “direct copying was impossible since the Atari programming was in Basic and IBM in Pascal”;¹⁷⁹ that “a different program, different because of language and hardware, had to be devised”;¹⁸⁰ and that “[slavish] copying is impossible here, given the differences between the hardware for the Atari and IBM computers.”¹⁸¹ In other words, this court found that where differences between the programs arise primarily from differences in the hardware, infringement can be avoided.¹⁸² Yet that conclusion would seem hopelessly irreconcilable with the *SAS-Whelan-Uniden* cases discussed above, in which porting or translating was insufficient to avoid infringement.

F. Possible Infringement By Copying File Structures

In *Whelan Associates, Inc. v. Jaslow Dental Laboratory, Inc.*,¹⁸³ the Third Circuit held that the file structures of a dental lab record keeping program had an arrangement and organization which conveyed information and are thus copyrightable:

The file structures in the Dentalab and Dentcom systems require certain information and order that information in a particular fashion. Other programs might require different information or might use the same information differently. . . . [W]e have no doubt that these file structures are sufficiently informative to deserve copyright protection.¹⁸⁴

the respective menu lists in the second module of each of the two programs.” *Q-CO Indus. v. Hoffman*, 625 F. Supp. 608, 614, 228 U.S.P.Q. 554 (S.D.N.Y. 1985).

177. *Id.* at 616.

178. *Id.* at 614.

179. *Id.* at 615.

180. *Id.*

181. *Id.* at 616.

182. The court had earlier noted that “[t]he differences between the programs arise primarily from the hardware deficiencies in the IBM-PC relevant to the screen display.” *Id.* at 613.

183. 797 F.2d 1222, 230 U.S.P.Q. 481 (3rd Cir. 1986), *cert. denied* 479 U.S. 1031 (1987).

184. *Id.* at 1243.

The Third Circuit went on to hold that the defendant's program infringed the copyrighted program *in part* based on the similarities in the file structures of the two programs. But it is not clear from the decision whether copying of file structures, without more, would or could render a program infringing (that is, substantially similar to a copyrighted program). In *Whelan*, infringement was found based on much more than copying of file structures. Specifically, the Third Circuit affirmed the finding of substantial similarity based on the similarity of the file structures, the screen outputs, and the structure and sequence of five of the most important subroutines.¹⁸⁵ Moreover, the Third Circuit did indicate that in at least certain circumstances similarity in file structures will not result in a finding of infringement:

It is true that for certain tasks there are only a very limited number of file structures available, and in such cases the structures might not be copyrightable and similarity of file structures might not be strongly probative of similarity of the program as a whole. We are simply not convinced that this is such a case.¹⁸⁶

1. Avoiding "File Structure" Infringement Through The Use Of Preprocessors

A way to avoid infringement based on similarity in file structures while still maintaining complete compatibility may be to use a preprocessor which converts data created for the program being emulated into the user's own internal data format. For example, in *Lotus Dev. Corp. v. Paperback Software Int'l*,¹⁸⁷ the court commented that defendant did not have to use the same macro command language as used in the copyrighted spreadsheet program of the industry leader it was emulating since it could have provided a macro conversion utility to translate macros written for the copyrighted program.¹⁸⁸ Similarly, in *Synercom Technology, Inc. v. University Computing Co.*,¹⁸⁹ the court held that a defendant's computer software, including a preprocessor program for accepting data in a certain input format, in which the plaintiff claimed copyright was non-infringing. In *Digital Communications Associates, Inc. v. Softklone Distributing Corp.*,¹⁹⁰ the court commented that a

185. *Id.* at 1248.

186. *Id.* at 1243 n.43.

187. 740 F. Supp. 37, 15 U.S.P.Q.2d 1577 (D. Mass. 1990).

188. *Id.* at 69.

189. 462 F. Supp. 1003, 199 U.S.P.Q. 537 (N.D. Tex. 1978).

190. 659 F. Supp. 449, 2 U.S.P.Q.2d 1385 (N.D. Ga. 1987).

“comparable situation [to *Synercom*] would have occurred had the defendants designed a program which accepted all of the same commands utilized by the plaintiff . . .”¹⁹¹

G. *Infringement By Programming A “Method” Described In A Manual*

In *Williams v. Arndt*,¹⁹² plaintiff devised a specific, step-by-step method for trading in various commodities through making predictions in the commodities market by analyzing historical data such as prices and trends over a period of time. Plaintiff wrote a manual setting forth his method. Plaintiff copyrighted the manual. Defendant programmed the step-by-step method writing code for each step in the method (e.g., input certain historical data, perform certain calculations or comparisons in a certain order to arrive at a value (signal) indicating where the commodity is likely to go and therefore what the broker should do, and the like). Plaintiff alleged that the program infringed his copyright in the manual.

The court found that the defendant’s computer program was not “a new and different expression of the idea of a market trading system,” but rather the implementation or translation of that system from English (the manual) to source code. The court also found that defendant’s program infringed plaintiff’s manual copyright because “[h]ere, Arndt merely translated Williams work from English into computer language (in this case, Basic) which produced substantially similar results”; the “source code contained similarities which generated identical signals in the vast majority of comparisons”; and using one example, going through the step-by-step process of both systems the results of the two systems were “essentially the same.”¹⁹³ The court had earlier commented that “[t]he output of Williams’ manuals and Arndt’s programs was substantially the same, even though one was written in English and one was written in a computer language or source code” and “[i]n overall structure, the two competing systems are substantially similar.”¹⁹⁴ The plaintiff’s expert had testified that of the seven unique features set out in the manual, defendant’s program had at least six and “generated signals that were 75% the same,”¹⁹⁵ and that, “[i]n his opinion, the source code meant nothing since the program can

191. *Id.* at 460.

192. 626 F. Supp. 571, 227 U.S.P.Q. 615 (D. Mass. 1985).

193. *Id.* at 579.

194. *Id.* at 576.

195. *Id.* at 580.

be written in various ways. But when the output is the same, the program is the same."¹⁹⁶

Thus, in this case the court is extending copyright protection for the step-by-step method set forth in the manual and the output from that method. It is not for the expression of the method. The case is wrongly decided. Nevertheless, if applied by other courts, it bodes poorly for the person who develops a compatible computer program using the methods set out in a manual.¹⁹⁷

H. *Infringement By Copying The User Interface*

Early on, computer generated screens for video games were found copyrightable as audiovisual works.¹⁹⁸ That protection was soon extended to the user interface (menus) of computer programs. It is now well-settled that all aspects of a computer program not dictated by its overall function may constitute protectable expression.¹⁹⁹ The purpose or function of the program is its uncopyrightable idea, and everything else that is not necessary to that purpose or function would be part of the copyrightable expression of that idea.²⁰⁰ Thus, the structure, sequence and organization of a program *and its user interface* qualify for copyright protection where there are alternative ways to design these aspects of the program.²⁰¹ The overall structure, sequence and arrangement of the screens, text, and artwork (i.e., the audiovisual displays in general) are protected under the copyright laws.²⁰²

196. *Id.* at 581.

197. See *Evans Newton v. Chicago Sys. Software*, 793 F.2d 889, 893 n.4, 895 n.6, 230 U.S.P.Q. 166 (7th Cir. 1986), *cert. denied* 479 U.S. 949 (1986) (infringement of manual for management program; similarities in computer program relevant evidence of similarities in manual).

198. *M. Kramer Mfg. Co. v. Andrew*, 783 F.2d 421, 228 U.S.P.Q. 705 (4th Cir. 1986); *Williams Elec. v. Artic Int'l*, 685 F.2d 870 (3d Cir. 1982); *Midway Mfg. Co. v. Artic Int'l*, 547 F. Supp. 999 (N.D. Ill. 1982), *aff'd* 704 F.2d 1009, 218 U.S.P.Q. 791 (7th Cir. 1983), *cert. denied* 464 U.S. 823 (1983).

199. *Whelan Assocs. v. Jaslow Dental Lab.*, 797 F.2d 1222, 230 U.S.P.Q. 481 (3d Cir. 1986), *cert. denied* 479 U.S. 1031 (1987).

200. *Id.* at 1236.

201. *Johnson Controls v. Phoenix Control Sys.*, 886 F.2d 1173, 1175-76, 12 U.S.P.Q.2d 1566 (9th Cir. 1989); *Telemarketing Resources v. Symantec Corp.*, 12 U.S.P.Q.2d 1991, 1993-94 (N.D. Cal. 1989) ("Copyright protection applies to the user interface, or overall structure and organization of a computer program, including its audiovisual displays, or screen 'look and feel.'").

202. *Broderbund Software v. Unison World*, 648 F. Supp. 1127, 1135, 231 U.S.P.Q. 700 (N.D. Cal. 1986); *Mfg. Tech. v. Cams*, 706 F. Supp. 984, 994, 10 U.S.P.Q. 1321 (D.C. Conn. 1989) (holding that copyright protection extends to the user interface, including the sequence or flow of screens and the content of specific screens); *Digital Communications Assoc. v.*

For example, in *Ashton-Tate Corp. v. Fox Software*,²⁰³ Ashton-Tate sued Fox with infringement of its copyright in the user interface of its popular dBASE III PLUS computer program. According to papers filed by Ashton-Tate, the copyrightable aspects of the user interface included (1) the specific sequence or flow of the screens (menus, visual displays) presented to the user; (2) each individual screen; and (3) the command set or command structure including about 400 different commands (declarative statements or instructions through which the user communicates with the computer system) such as CREATE, BROWSE, DISPLAY STRUCTURE, DISPLAY STATUS, APPEND, and the like.

In *Digital Communications Associates, Inc. v. Softklone Distributing Corp.*,²⁰⁴ the court held that plaintiff's copyright in the main menu (status screen) of its Crosstalk communication software was infringed by defendant's Mirror communication software which included a substantially similar main menu (status screen).²⁰⁵

Softklone Distrib. Corp., 659 F. Supp. 449, 459, 2 U.S.P.Q.2d 1385 (N.D. Ga. 1987) (finding infringement where defendant copied a single status screen of plaintiff's computer program).

203. 760 F. Supp. 831 (C.D. Cal. 1990) (order invalidating copyrights); 760 F. Supp. 831, 832, 24 Copy. L. Rep. (CCH) ¶26,714 (C.D. Cal. 1991) (order rescinding first order; only the CCH reporter includes a declaration of the Register of Copyrights which may have influenced the judge's decision to rescind his first order). Each order is only a few lines. The facts are taken from pleadings filed in the case.

204. 659 F. Supp. 449, 2 U.S.P.Q.2d 1385 (N.D. Ga. 1987).

205. Plaintiff's program, called Crosstalk, for communication between microcomputers, and defendant's program, called Mirror. *Id.* at 452-53. Plaintiff had copyright registration on the program itself which was not at issue. Plaintiff also had registration on its main menu or status screen which it alleged was infringed by the corresponding screen in defendant's Mirror.

Georgia district court held that although a copyright in a game's audiovisual display will protect all copies (i.e., things that can be used to reproduce the displays including the underlying computer program), a copyright in the program will not protect the audiovisual display which it creates since the display cannot reproduce (and therefore is not a copy of) the program. Thus, the computer program copyright is not infringed by copying the status screen.

The court held the status screen to be copyrightable subject matter over the alleged application of the idea/expression dichotomy. The idea was the manner in which the status screen operates, typing two symbols at the bottom corresponding to a particular command followed by a value which causes the computer to change the status of the system accordingly and reflect the change at the top of the screen. The expression is the actual text and the organization and layout of the screen. *Id.* at 458.

The court found *Synercom* inapplicable. *Synercom* would be on point if defendant developed a program to accept the data inputted on the screen as was the case with the *Synercom* preprocessor program which accepted data from the input card. Instead, the present case is like the hypothetical posed in *Synercom* in which the defendant would have copied the input format cards which would have been an infringement. The status screen in this case is analogous to the input forms in *Synercom*. *Id.* at 460.

The court rejected application of the blank form doctrine since the screen conveyed

In *Telemarketing Resources v. Symantec Corp.*,²⁰⁶ the court stated that “[c]opyright protection applies to the user interface, or overall structure and organization of a computer program, including its audiovisual displays, or screen ‘look and feel,’” but found that the nine menus in defendant’s computer outlining program were not substantially similar to the nine corresponding menus in the plaintiff’s copyrighted program.²⁰⁷

In *Lotus Dev. Corp. v. Paperback Software Intl.*,²⁰⁸ the district court held that the Lotus 1-2-3 user interface or “the menu structure, taken as a whole—including the choice of command terms, the structure and order of those terms, their presentation on the screen, and the long prompts,” was copyrightable and infringed by defendant’s compatible spreadsheet program.²⁰⁹

In *Broderbund Software, Inc. v. Unison World, Inc.*,²¹⁰ the California district court held, after a full liability trial, that plaintiff’s audiovisual copyright in the menus (screens) of its mass marketed computer program called “The Print Shop” for creating and printing customized banners, signs, posters, calendars, stationery, greeting cards, and the like, was infringed by defendant’s competing program called “PrintMaster.” The court held that the menu screens (user interface) were copyrightable subject matter, properly registered as an audiovisual work, and that such copyright protected against copying of the overall layout, sequence, structure, sequencing and arrangement of the screens, which is also copyrightable subject matter. Thus, copyright protection extended to each individual screen including not only the words of the screen but also the structure or arrangement of words on the screen. Additionally, copyright protection extended to the order, sequence and arrangement of the screens relative to each other such as which screen followed which during execution. The court found that the total concept and feel of these programs “is virtually identical” as

information. *Id.* at 462. The court found the status screen to be a compilation of information/terms rather than a derivative work. *Id.* at 463.

Finally, placing the two status screen side-by-side (Exhs. A and B) demonstrated that they were substantially similar. In so finding, the court applied the Ninth Circuit 2-step intrinsic/extrinsic test for substantial similarity. As to the extrinsic test, the two screens performed the very same function and thus were substantially similar under the extrinsic test. As to the intrinsic test, the court found that the total concept and feel of the screens when placed side-by-side was evident. *Id.* at 465.

206. 12 U.S.P.Q.2d 1991 (N.D. Cal. 1989).

207. *Id.* at 1993-94.

208. 740 F. Supp. 37, 15 U.S.P.Q.2d 1577 (D. Mass 1990).

209. *Id.* at 67-68.

210. 648 F. Supp. 1127, 231 U.S.P.Q. 700 (N.D. Cal. 1986).

“the ordinary observer could hardly avoid being struck by the eerie resemblance between the screens of the two programs.”²¹¹

I. *Infringement By Copying The “Physical” or “Hardware” User Interface*

In *Pearl Systems, Inc. v. Competition Electronics, Inc.*,²¹² plaintiff made and sold a shot timer device used in competitive pistol shooting. The timer was controlled by a microprocessor and a copyrighted control program. The timer had a shot review function which permitted the user to determine the total number of shots fired and the time between consecutive shots during a given round and a par time function used to measure the number of shots fired in a pre-set time period. A different subroutine controlled each function. In order to utilize a function, the user pressed and released certain buttons in a predetermined order. The corresponding subroutine would then process the data from the buttons to perform the subject function and display the results. The defendant sold a competing shot timer which, like plaintiff’s product, was controlled by a microprocessor and a control program. Further, for all practical purposes, the buttons were the same as in plaintiff’s timer and would be pressed and released in the same order to perform the subject functions. The court held that the defendant’s computer program infringed the plaintiff’s copyright in its program because the two were substantially similar (virtually identical) at the systems level design.²¹³ From the decision, it appears that the only similarity was that in each program when a certain button was pressed or released the program would obtain the same result. In other words, defining the operation and function of each button in the same way as in plaintiff’s timer resulted in the programs being substantially similar and having the same ‘total concept and feel.’²¹⁴ The similarities of the programs at the system level appeared dictated by the similarities in the button definition.

From this, one can see that the buttons and their definition were treated as the equivalent of the user interface in the more typical software case. Indeed, if the programs ran on a personal computer, the buttons could be replaced with button icons. What is troublesome is that in the PC situation, the courts find infringement based on similarities in the user interface such that the user inter-

211. *Id.* at 1137.

212. 8 U.S.P.Q.2d 1520 (S.D. Fla. 1988).

213. *Id.* at 1522-23.

214. *Id.* at 1524.

face is protected by copyright so that similarities at that level infringe. But here, the physical buttons on the timer were utilitarian and not protected by copyright. Therefore, the court's finding of copyright infringement appears to have been based on similarities in the programs dictated by non-copyrightable subject matter. Once the use and function of the keys are defined, any program that would implement that definition would infringe. That conclusion is evident from the fact that to demonstrate alternative, non-infringing software, one of plaintiff's experts designed and wrote software for a shot timer device "[w]ithout being . . . shown any shot timer device"; he was told only the functions that had to be performed.²¹⁵ Of course if a program is not defined by the buttons it can be much more different.

J. *Contributory Infringement By Allowing Modification Of A Copyrighted Program*

In *Midway Mfg. Co. v. Artic International, Inc.*,²¹⁶ the plaintiff had an audiovisual copyright on its video game. Defendant sold a printed circuit board which sped up the video game. The court held that when the consumer used the defendant's board he generated an audiovisual work which was a derivative work of the plaintiff's audiovisual work and thus infringed plaintiff's copyright. Defendant was subject to liability for contributing to that infringement.²¹⁷

The legal principles pronounced in *Midway* might arguably be applied to computer software areas where a third party develops add-on software to a popular program such as the Lotus 1-2-3 spreadsheet program or Wordperfect wordprocessing program. The add on program would operate as an extension of the original program, thereby creating a derivative work, or so the argument would go. The argument would gain strength, and possibly be persuasive, if the add on program actually modified any of the code of the original program.

Indeed, in a recent case, *Nintendo of America, Inc. v. Lewis Galoob Toys, Inc.*,²¹⁸ the defendant Galoob argued that a *Midway*-type holding would have a dramatic negative impact on the computer industry, stating:

215. *Id.* at 1522.

216. 547 F. Supp. 999 (N.D. Ill. 1982), *aff'd* 704 F.2d 1009, 218 U.S.P.Q. 791 (7th Cir. 1983), *cert. denied* 464 U.S. 823 (1983).

217. *Id.* at 1013-14.

218. 923 F.2d 862, 1991 U.S. App. LEXIS 6572, 1991 U.S. App. LEXIS 1160 (full text slip opinion) (9th Cir. 1991).

Many purchasers of computer software programs find that their use of that software is enhanced by modifications of it for their own personal use. . . . [M]ost buyers do so by purchasing "add-on" software that modifies or adds to the underlying software program to make the program work more effectively or conveniently for the purchaser. There are hundreds of such "add-ons" widely marketed in this country for use with existing copyrighted computer programs; spelling and grammar checking programs designed to work in conjunction with word processing software are common examples. Many of these "add-on" programs are designed to alter the audiovisual output of the copyrighted software with which they work. Nintendo would condemn the interaction of the underlying and the add-on programs for creating an infringing "derivative work".²¹⁹

In *Nintendo*, the Ninth Circuit affirmed the district court order *preliminarily* enjoining Galoob from marketing "Game Genie", a hardware device for altering the copyrighted audiovisual display generated by a Nintendo game cartridge. According to the district court, Nintendo likely would establish at trial that Game Genie created an unauthorized derivative work of Nintendo's audiovisual display.²²⁰ The appeals court found that at the very least Nintendo

219. Galoob's trial brief is reproduced in the Computer Industry Litigation Reporter, published by Andrews Publication, May 15, 1991, at 13055-13096.

220. The Ninth Circuit explained the facts as follows:

Nintendo makes and sells the Nintendo Entertainment System, a home video game system. To use the system, a player inserts into the system's control deck a cartridge containing one of the games that Nintendo produces or licenses others to produce. The game is then displayed on a connected television screen. By moving buttons and a joystick on the controller, the player controls the actions of one of the game's characters and progresses through the video game.

The Game Genie is a hardware device manufactured by Galoob that can be attached to a game cartridge before it is inserted into the Nintendo control deck. The Game Genie allows the player to alter certain features of the Nintendo game by choosing up to three codes from a large number of Game Genie codes. For each of the codes entered by the player, the Game Genie blocks the value for a single data byte sent by the game cartridge to the central processing unit in the Nintendo controller and replaces it with a new value. For example, if the cartridge sends a data byte setting the number of lives for the player's character at 3, the Game Genie might, depending on the codes chosen by the player, substitute the value 6, thereby giving the character 6 lives rather than 3 in which to complete the game. The player can also change the color of certain features of the audiovisual display, change the speed at which the character moves, allow the character to float above obstacles and alter myriad other features of the Nintendo game.

The Game Genie makes no change in the data stored in the game cartridge. Its interception and substitution of data takes place only as long as it is attached to the game cartridge and the controller's power is on. The individual changes that the user makes through entering codes therefore alter the audiovi-

raised a substantial question on the merits, justifying the grant of a preliminary injunction. However, after a full bench trial, the district court issued a two-sentence order modifying the preliminary injunction to allow Galoob to begin manufacturing and assembling, but not marketing, Game Genie and stating that "[a] full and final Order and Memorandum of Decision setting forth the Court's findings of fact and conclusions of law, and dissolving the preliminary injunction in its entirety, will issue in the near future."²²¹ Because of the shotgun defense trial strategy adopted by Galoob in which Galoob argued countless grounds for holding its actions non-infringing, it is not possible at this time to know whether the final decision will be consistent with or contrary to the decision in *Midway*, and whether the decision will provide comfort or strike fear in the hearts of those active in the software industry.²²²

K. *Databases: Death of the "Sweat Of The Brow" Theory Of Copyright Protection*

Feist Publications, Inc. v. Rural Tel. Service Co.,²²³ is a copyright infringement case recently decided by the United States Supreme Court which has considerable potential ramifications in the area of software copyrights.

Rural was a public utility providing telephone service to persons in a single telephone service area in Kansas. Persons applying for telephone service from Rural submitted an application including their names and addresses. Rural assigned each person a telephone number, and then published a telephone directory including white pages listing in alphabetical order the name, town and telephone number of each subscriber. Feist published a directory covering many telephone service areas, one of which was Rural's service area. For all practical purposes, it can be said that Feist copied Rural's white pages listings into the white pages of its directory. Rural sued Feist for infringement of Rural's copyright in its directory. The district court granted summary judgment to Rural, holding that telephone directories are copyrightable and that Rural's

sual display temporarily but do not change it or the Nintendo game permanently.

Id., 1991 U.S. App. LEXIS at 1160.

221. The July 8, 1991 two-sentence order is set out in the Computer Industry Litigation Reporter, published by Andrews Publication, July 17, 1991 at 13350.

222. *Midway Mfg. Co. v. Artic Int'l*, 547 F. Supp. 999 (N.D. Ill. 1982), *aff'd* 704 F.2d 1009, 218 U.S.P.Q. 791 (7th Cir. 1983), *cert. denied* 464 U.S. 823 (1983).

223. 111 S.Ct. 1282, 18 U.S.P.Q.2d 1275 (1991).

copyright had been infringed. The Tenth Circuit affirmed the district court holding, but the Supreme Court *reversed*.

According to the Supreme Court, the source of Congress' power to enact copyright laws is Article I, section 8, clause 8, of the Constitution, which authorizes Congress to "secure for limited Times to Authors . . . the exclusive Right to their respective Writings."²²⁴ The author of a work is the person who *originates* the work. Thus, there is a constitutional requirement that a work be original. Original in this context has two elements. The first element is independent creation. The work must be independently created by the author as opposed to copied from other works. But the work need not be new or novel. It can resemble another's work as long as such resemblance is not the result of copying. The second element is creativity. The work must possess at least some modicum of creativity. However, even a slight amount of creativity will suffice. This originality requirement is codified in section 102(a) which provides that copyright protection subsists in "*original* works of authorship."

Facts do not originate with and thus, are not created by any author. Facts already exist; they are merely discovered and recorded. Thus, no one can claim a copyright in facts. This principle is codified in section 102(b) which provides that "[i]n no case does copyright protection . . . extend to any . . . discovery," including the discovery of facts. Thus, the names and related information in Rural's directory were uncopyrightable facts. Rural merely gathered such facts and recorded them in its directory. These facts did not originate with Rural. Feist, therefore, was free to copy such facts. It would not matter if Rural had expended significant time and money gathering such facts. The Supreme Court repudiated cases which had afforded copyright protection to facts merely because of one's "industrious collection" of the facts known as the 'sweat of the brow' theory of copyright protection. Therefore, Feist was free to copy the facts in Rural's directory.

The Supreme Court acknowledged that one can express facts in an original way and thus, claim a copyright in her original form of expression. One remains free to copy the facts but not the expression of those facts. Here, Rural did not express the facts, names and related information, in an original way, it merely listed them in its directory. Rural added no written expression but rather let the facts speak for themselves.

224. U.S. CONST. art. I, § 8, cl. 8.

The Supreme Court further recognized that if one selects, coordinates or arranges facts in an original way, he/she may claim copyright in such selection, coordination or arrangement. This is codified in sections 101 and 103(a) which provide that "the subject matter of copyright . . . includes compilations"²²⁵ which is "a work formed by the collection and assembly 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."²²⁶ Thus, a compilation requires that the facts be "selected, coordinated, or arranged" in an original way. One remains free to copy the facts but not another's selection, coordination or arrangement of those facts. This is codified in section 103(b) which provides that "[t]he copyright in a compilation . . . extends only to the material contributed by the author of such work, as distinguished from the preexisting material [facts] employed in the work, and does not imply any exclusive right in the preexisting material [facts]."²²⁷ However, the selection, coordination, and arrangement of Rural's white pages did not satisfy the minimum constitutional standards for copyright protection. Rural selected all of its subscribers and thus, did not exercise creativity in that regard. Rural selected only the most basic information about each subscriber—name, town, and telephone number—and such selection lacks the modicum of creativity necessary to transform mere selection into copyrightable expression. Rural arranged the subscribers alphabetically by surname. But arranging names alphabetically in a white pages directory is not creative. It is instead the *de facto* standard—so commonplace that it has come to be expected as a matter of course. In short, in preparing its white pages, Rural simply takes the data provided by its subscribers and lists it alphabetically by surname. Rural's selection and arrangement of facts was so mechanical and routine as to require no creativity whatsoever. The end product is a garden-variety white pages directory, devoid of even the slightest trace of creativity.

Thus, the Supreme Court held that Feist copied only unprotectible facts and an unprotectible arrangement of those facts. That was permissible under the copyright laws. Indeed, the Supreme Court went so far as to say that such copying was "encouraged," stating:

It may seem unfair that much of the fruit of the compiler's labor

225. 17 U.S.C. § 103(a).

226. 17 U.S.C. § 101.

227. 17 U.S.C. § 103(b).

may be used by others without compensation. As Justice Brennan has correctly observed, however, this is not "some unforeseen byproduct of a statutory scheme." It is, rather, "the essence of copyright," and a constitutional requirement. The primary objective of copyright is not to reward the labor of authors, but "to promote the Progress of Science and useful Arts." Art. I, § 8, cl. 8. To this end, copyright assures authors the right to their original expression, but encourages others to build freely upon the ideas and information conveyed by a work. This principle, known as the idea/expression or fact/expression dichotomy, applies to all works of authorship. As applied to a factual compilation, assuming the absence of original written expression, only the compiler's selection and arrangement may be protected; the raw facts may be copied at will. This result is neither unfair nor unfortunate. It is the means by which copyright advances the progress of science and art [Case citations omitted.]²²⁸

1. Application To Computer Databases

Databases are essentially a compilation of facts. In many cases there may be creativity in the selection of facts for use in the database or in the arrangement of the facts within the database. But that cannot prevent others from copying the facts. Moreover, in many applications there would be insufficient originality (creativity) in the selection and arrangement process thereby completely denying copyright protection to the database and encouraging lawful, wholesale copying of the database. One example that immediately comes to mind are mailing list databases which firms actively market for profit. A company engaged in mass marketing software encloses a registration or warranty card with each package of software. The purchaser sends back the card with his name and address. The seller places the name and address in a database. There may be no more creativity in the selection and arrangement of the data than was so in the white pages of *Feist*. The database could be copied wholesale. While other databases might evidence greater creativity in the expression of facts that would still not preclude others from taking those facts, expressing them in an original way, and distributing a competing database at a fraction of the development cost incurred by the original author. Thus, while many have predicted the imminent birth of the CD ROM reference database revolution, the *Feist* case might delay, if not completely abort, that event. At a minimum, CD ROM database distributors

228. *Feist*, at 1289-90.

will likely look much more closely at contractual and trade secret protection for their property. The computer industry has certainly lost no time predicting the impact of the *Feist* decision. For example, the author of an article in a Southern California Computer Magazine opined that "[t]his ruling will have a great impact on the still-fledgling database publishing industry, probably causing many companies that were going to publish large amounts of data to think twice."²²⁹

L. *Contributory Infringement Of Database Copyright By Allowing Downloading*

In *Telerate Systems, Inc. v. Caro*,²³⁰ plaintiff Telerate provided computerized financial information to subscribers. Telerate provided access to its database through a proprietary network accessed using either a terminal licensed from Telerate or using the subscriber's own personal computer configured with proprietary software licensed from Telerate. Defendants marketed a computer program called Excel-A-Rate for configuring a personal computer to access the Telerate database. Excel-A-Rate provided additional features including the capability of downloading data from the database onto disk. Telerate sued for copyright infringement and moved for a preliminary injunction prohibiting further distribution of Excel-A-Rate. The Court held that plaintiff was likely to succeed at trial on the merits of its copyright claim and granted the injunction.²³¹

It was true that defendants did not copy the database or any portion thereof and, therefore, had committed no act of direct infringement. However, defendants provided purchasers of Excel-A-Rate with the capability of copying the database, or at least a portion thereof. Thus, defendants were charged with contributory infringement. The Court agreed finding that Excel-A-Rate had no substantial non-infringing use by applying *Sony Corp. of Am. v. Universal City Studios, Inc.*²³² That is because the *only* uses of Excel-A-Rate require the user to first copy (transmit) a portion of the

229. Hoffman, *Industry Insight, Supreme Court Rules On Databases, New Workstation Standards Association Formed*, MICROTIMES, April 29, 1991.

230. 689 F. Supp. 221, 8 U.S.P.Q.2d 1740 (S.D.N.Y. 1988).

231. The Court also held that Telerate was likely to succeed at trial on the merits of its other claims, namely, interference with contracts between plaintiff and its customers which essentially excluded the use of personal computer with Excel-A-Rate as the terminal; misappropriation of plaintiff's trade secret in the database; and violation of the Telecommunications Act. *Id.* at 240.

232. 464 U.S. 417, 220 U.S.P.Q. 665 (1984).

database to his personal computer. The Court found such practice not to be exempted from infringement under the "fair use" doctrine applied in *Sony*.

M. Infringement By Copying Another's Database Pagination

In *West Pub. Co. v. Mead Data Cent., Inc.*,²³³ West published its West Reporters containing decisions decided by various courts. Attorneys cited these cases to courts by reference to the page number in a given West volume containing the case. If an attorney needed to cite to a particular statement made in a decision, the attorney would again cite the page number in the West volume where the statement was made. West also had an electronic database with the same cases. The database was logically arranged the same as the volumes, so an attorney could use the electronic database without needing to resort to the volumes to determine correct page and volume numbers for his citations.

MDC was a competing publisher having the same cases, which were in the public domain, in its Lexis database. MDC planned to implement a Star Pagination Feature in which not only would each case in the Lexis database include the page number where the case begins in the West Reporters (something which MDC had always done and West conceded was a fair use—most likely because West wanted the Lexis to have the first page so the user could then easily look up the case in the West Reporter), but also a jump or pinpoint cite for each page of the case. The case in Lexis would have each page numbered from 1 to n corresponding to the page breaks in the West Reporter, so a user viewing page i of the case in Lexis would know that such page corresponds to a page in the West Reporter corresponding to the first page (which Lexis supplies) plus i. Theoretically, a user could sit at the Lexis terminal and page through what corresponds to a complete West Reporter page-by-page.

West sued for copyright infringement. The district court granted a preliminary injunction against MDC's use of the Star Pagination Feature and the Eighth Circuit affirmed. According to the Eighth Circuit, West had shown a likelihood that it had a valid copyright in the arrangement of its cases which reflects sufficient originality and that by indicating the West page numbers through the jump cite, MDC had appropriated this arrangement.

The case is of doubtful validity after the Supreme Court deci-

233. 616 F. Supp. 1571 (D. Minn. 1985), *aff'd* 799 F.2d 1219, 230 U.S.P.Q. 801 (8th Cir. 1986).

sion in *Feist*. MDC had argued that its Star Pagination Feature did not infringe West's copyright because its citations to page numbers are statements of pure fact. The Eighth Circuit rejected that argument relying on a telephone directory case holding that while entries in directory, names, addressees and phone numbers, are facts such that isolated use of these facts is not copyright infringement. Copying each and every listing is an infringement. *Feist* effectively overruled such telephone directory cases.

N. *Possible Infringement By Copying A Command Set or Computer Language*

It remains an open question as to whether a computer language itself, as opposed to a particular implementation of the language, constitutes copyrightable subject matter. One commentator suggests that a computer language is not copyrightable because if the functions which the computer performs are uncopyrightable, so should be the case for labels for such functions (e.g., Print, Go To) under the merger doctrine as there is only a limited number of ways of expressing such functions.²³⁴ But that is not accurate. First, while there may be only a limited number of labels for each function (a limited number of ways of expressing each command), a language involves much more. For example, it involves the permissible arguments, or operands, and their order. There are an unlimited number of commands in that sense. Moreover, there are unlimited combinations of command labels which together define the language and such might be copyrightable as a compilation of terms. The same scholar suggests that a computer language is not copyrightable because it is not a computer program within the meaning of the Copyright Act. A computer program is defined in section 101 as "a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result." A computer program is thus written in a computer language, but the language is not the program. While that may be true, it does not end the matter. The language can still be copyrightable as a literary work or as a compilation. The definition of a computer program was not added so as to eliminate elements of a computer program from copyright protection, but rather only to make clear that a computer program itself was copyrightable.

234. Sumner & Lundberg, *Patentable Computer Program Features As Uncopyrightable Subject Matter*, 17 AIPLA Q. J. 253-54 (1989).

1. Pre-Computer Cases

At least one pre-computer case arguably stands for the proposition that the elements of a computer language are copyrightable subject matter, separate and apart from a user interface. In *Reiss v. National Quotation Bureau*,²³⁵ the plaintiff sued for infringement of its copyright under the 1909 Copyright Act in a book containing 6,325 coined words of 5 letters each. The words had no meaning, but were all susceptible of pronunciation. They were carefully prepared in accordance with the requirements of the telegraph companies to serve as a cable code, and the book was sold to those who might make use of it as a private code by agreeing upon meanings to be given to as many of the coined words as they chose. The defendant brought a motion to dismiss the complaint. The motion was denied in an opinion by Learned Hand. The defendant argued that a series of coined words is not a writing of an author as the Constitution uses that word. The court stated that if the list of coined words was not such a writing, then the complaint must be dismissed. Otherwise it would stand. The defendant argued that the word list could only be a writing if the words had meaning. The Court disagreed and held that the collection of coined terms constituted copyrightable subject matter and allowed the complaint to stand. In making its decision, the Court indicated that a person could obtain copyright protection for an original "set of words or symbols [devised] to form a new abstract speech" or for an original mathematical language.²³⁶ Applying the reasoning of *Reiss*, it may

235. 276 F. 717 (S.D.N.Y. 1921).

236. The pertinent passage of the court's opinion is as follows (emphasis added):

These words have a prospective meaning, but as yet they have not received it, like an empty pitcher. *Suppose some one devised a set of words or symbols to form a new abstract speech, with inflections, but as yet with no meaning, a kind of blank Esperanto. The case would be approaching the plaintiff's, though not there, because the words would, indeed, express relationship.* Mathematics has its symbols, indeed a language of its own, Peanese, understood by only a few people in the world. Suppose a mathematician were to devise a new set of compressed and more abstract symbols, and left them for some conventional meaning to be filled in. Still we would not be quite at the plaintiff's words, but again we should not be far away. The distinction is real, but for practical purposes seems to me irrelevant.

Not all words communicate ideas; some are mere spontaneous ejaculations. Some are used for the sound alone, like nursery jingles, or the rhymes of children in their play. Might not some one, with a gift for catching syllables, devise others? There has of late been prose written, avowedly senseless, but designed by its sound alone to produce an emotion. Conceivably there may arise a poet who strings together words without rational sequence — perhaps even coined syllables — through whose beauty, cadence, meter, and rhyme he may seek to make poetry. Music is not normally a representative art, yet it is a

be argued that a computer language, like a telegraph language, an abstract language, and a mathematical language, is eligible for copyright protection. In *Lotus Dev. Corp. v. Paperback Software Int'l*,²³⁷ the district court suggested that it might be receptive to that very argument.

2. The Lotus Case

In *Lotus Dev. Corp. v. Paperback Software Int'l*,²³⁸ the defendants argued that languages, such as English and French, are not copyrightable, only text written in the language is copyrightable expression, and that computer languages should be treated the same way. The computer language is not copyrightable, only programs (set of statements or instructions) written in the language are copyrightable expression. The Lotus 1-2-3 macro-instruction language was a computer language and, therefore, not protectable and could be copied. Since the Lotus macro-instructions were in essence memorized, or recorded, keystrokes typed using the user interface, the only way to use the macro language was to have the same user interface.²³⁹ Therefore, the user interface was dictated by the unprotectible macro language, and it too could be freely copied. In dicta, the court strongly indicated that when confronted with the issue head on, it would find computer program languages to be copyrightable, relying in part on the *Reiss* decision.²⁴⁰ Specifically, the court found defendants' argument to be vulnerable in several particulars, most notably defendants' claim "[t]hat not only languages such as English and French but all other languages as well—including Esperanto, and *Reiss*' coined words . . . , and Pascal—are

"writing". There are meaningless rhymes — e.g., "Barbara Celarent" which boys use in their logic, or to remember their paradigms or the rules of grammar.

Works of plastic art need not be pictorial. They may be merely patterns, or designs, and yet they are within the statute. A pattern or an ornamental design depicts nothing; it merely pleases the eye. If such models or paintings are "writings", I can see no reason why words should not be such, because they communicate nothing. They may have their uses for all that, aesthetic or practical, and they may be the productions of high ingenuity, or even genius. Therefore, on principle, it appears to me no reason to limit the Constitution in any such way as the defendants require. *Id.* at 718-19.

237. 740 F. Supp. 37, 15 U.S.P.Q.2d 1577 (D. Mass. 1990).

238. *Id.*

239. The court correctly pointed out that the second half of this argument was spurious. The defendants could have written a conversion program to convert Lotus 1-2-3 macro-instructions into commands for their own user interface, as others had done. *Id.* at 69.

240. *Id.* at 72.

automatically ineligible for copyright protection.”²⁴¹ But there are cases which appear contrary to the dicta of *Lotus*, such as *Ashton-Tate Corp. v. Ross*.²⁴²

3. Ashton-Tate

In *Ashton-Tate Corp. v. Ross*,²⁴³ the court found that “All Ross gave to . . . [the programmer] was a list of commands he thought should be included in the program” and “Ross merely told . . . [the programmer] what tasks he believed the interface should allow the user to perform.” The court concluded that “[t]he list of commands is only an idea that is not protected under federal law.” Thus, Ross was not a joint author of the interface as he contributed no protectable expression. Under *Ross*, therefore, a list of computer commands corresponding to various defined tasks is not protectable expression. However, others may seek to distinguish *Ross* on the grounds that the court may have based its conclusion in part on a belief that the command list and possibly also the associated tasks were not original to Ross since the court had earlier noted that Ross contributed “a list of labels for user commands, many of which are common commands that were already available on other software programs” and that “[t]here was nothing innovative or novel about the labels that Ross proposed . . . or the order in which they are listed on the document.” Arguably, the decision is predicated on a finding that the command list was not original, not that a command list cannot be copyrightable.²⁴⁴

O. No Infringement For Copying Typefaces

Copyright Office regulations provide that “mere variations of typographic ornamentation [or] lettering” are not copyrightable and will not be registered.²⁴⁵ In *Eltra Corp. v. Ringer*,²⁴⁶ the Court upheld the Copyright Office’s refusal to register a typeface design as a useful article, concluding that “it is patent that typeface is an in-

241. *Id.*

242. 728 F. Supp. 597 (N.D. Cal. 1989), *aff’d* 916 F.2d 516, 16 U.S.P.Q.2d 1541 (9th Cir. 1990).

243. *Id.*

244. Ross appealed and the Ninth Circuit affirmed in *Ashton-Tate Corp. v. Ross*, 916 F.2d 516, 16 U.S.P.Q.2d 1541 (9th Cir. 1990). On appeal, Ross reiterated his argument that “the handwritten list of user commands . . . was a fixed expression of Ross’ ideas,” but the Ninth Circuit held that argument to be “meritless for the reasons given in the district court’s order”; to wit, “[t]he list simply does not qualify for copyright protection.” *Id.* at 521-22.

245. 37 C.F.R. § 202.1(a) (1990).

246. 579 F. 2d 294, 198 U.S.P.Q. 321 (4th Cir. 1978).

dustrial design in which the design cannot exist independently and separately as a work of art.”

This issue settled, the Copyright Office recently announced that digital data, in any form (e.g., “bitmapping”, “outlining” and/or “stroke definition”),²⁴⁷ for producing an uncopyrightable typeface on a display device, such as a computer display screen, printer or other output device, also is not copyrightable and therefore not registrable.²⁴⁸ According to the Office, the data that merely transforms an analog visual representation of a typeface or letterform into a digital electronic typefont or letterform is determined by the ultimate shape of the typeface character and requires little, if any, selection and arrangement. Therefore, the creation of the data lacks sufficient originality to qualify as an original work of authorship subject to copyright protection. However, the Copyright Office was careful to note that *computer programs* that control the digitization process may be registrable. But the Office also stated that “the claim to copyright must exclude any data that merely depicts the typeface or letterforms.”

In 1990, the Copyright Office approved copyright registration for Adobe Systems Inc.’s ITC Grammond font-generating computer program, one of Adobe’s PostScript typeface programs. This is believed to be the first copyright registration for a typeface program allowed by the Copyright Office. The registration, TX-396-004, protects the program that generates the characters in the typeface but does not extend to the typeface designs generated or the shapes of the individual characters. Adobe specifically disclaimed protection for the underlying typeface characters in its copyright application.

247. The Copyright Office explained that there are basically three techniques applied to represent character digitally:

(1) bitmapping in which a dot-by-dot representation of each character is stored in electronic memory and directly used to print or display the character;

(2) outlining in which lines or curves define the boundaries of typeface characters, and an outline font program instructs a computer or printer logic to fill in the outline of the character (e.g., if a laser printer is used, the beam sweeps from side to side or up and down within the boundaries of the letter, filling in the bounded area with dots that will show up as solids on the paper or screen); and

(3) stroke definition in which characters are represented like the strokes of a pen or brush following the path of a straight or curved line, and the computer operator must define the characteristics of the pen or brush, such as what occurs at corners and stroke endings, and ultimately, these descriptions must be converted into bitmaps.

A digitized typeface could be prepared by bitmapping alone, but it is more common to use a combination of the three techniques to improve the quality of the typeface.

248. 53 FR 38110, Copyright Office Docket No. 86-4, September 29, 1990.

P. *Infringement By Exceeding The Scope Of A License*

In *S.O.S. Inc. v. Payday Inc.*,²⁴⁹ the Ninth Circuit Court held that a software copyright licensee can infringe the copyright in the licensed software if the licensee's use of the software exceeds the scope of the license. In *S.O.S.*, the license authorized use of the copyrighted software not the making of multiple copies of the software nor the preparing of a modified version of the software.²⁵⁰

Q. *Trying To Avoid Infringement By Showing Similarities Necessary For Compatibility Or Do To Certain Hardware Or Other Constraints*

When faced with a charge of infringement, the defendant often argues that while there are similarities to the copyrighted program, those similarities were necessary due to certain constraints. Typically, the defendant avers that the idea is software satisfying the constraints and, therefore, any aspect of the copyrighted software necessary to meet the constraints is not protectable under the merger doctrine discussed above.²⁵¹ While occasionally such an argument has been successful, most often it has been met with summary rejection since the idea is defined broadly disregarding the desire to satisfy the constraints.

1. Economic Feasibility As A Constraint

In *Allen-Myland, Inc. v. International Business Machines Corp.*,²⁵² the court held that copying from a program is not excused merely because without such copying it would not be economically feasible to create more original code. The economic feasibility of developing code without such copying was simply not a relevant consideration. The idea of the copyrighted program was unrelated to the defendant's desire to develop an economically feasible alternative.²⁵³

249. 886 F.2d 1081, 12 U.S.P.Q.2d 1241 (9th Cir. 1989).

250. *Id.* at 1089.

251. See Section 1(a), *supra* p. 209-10.

252. 746 F. Supp. 520, 16 U.S.P.Q.2d 1817 (E.D. Pa. 1990).

253. The court stated, in toto:

Whether it would be economically feasible for AMI to write its own program to perform the 3092 processor controller functions without copying any of IBM's 3090 microcode [note 10 omitted] is not relevant to the idea/expression distinction. Otherwise, a computer program so complex that vast expenditures of time and money would be required to develop a different program expressing the same idea would not be protected, even if innumerable different programs expressing that idea could be written, while a simpler program requiring less significant expenditures of time and money might be protected. So long as

2. The Task Of The Software As A Constraint

In *Plains Cotton Cooperative v. Goodpasture Computer Service*,²⁵⁴ the Fifth Circuit affirmed the district court's refusal to preliminarily enjoin defendant from marketing a computer program alleged to infringe plaintiff's copyright in its cotton market information program. According to the Fifth Circuit, while the two programs had a similar sequence, organization and structure, "many of the similarities . . . are dictated by the externalities of the cotton market" and the "record supports the inference that market factors play a significant role in determining the sequence and organization of cotton marketing software, and we decline to hold that those patterns cannot constitute 'ideas' in a computer context."²⁵⁵ In other words, in this case, the structure and organization was an unprotectible idea which defendant was free to copy.

3. The Hardware On Which The Software Runs As A Constraint

In *NEC Corp. v. Intel Corp.*,²⁵⁶ Intel alleged that its copyrights in its 8086 and 8088 microcodes were infringed by the microcode of NEC's V20-V50 microprocessors. In holding that infringement was lacking, the court emphasized that similarities dictated by hardware constraints and the macroinstruction set would be insufficient to establish substantial similarity.²⁵⁷ In essence the court filtered out such similarities in making its determination.²⁵⁸ "Intel [had] contend[ed] that NEC could have created a microprocessor compatible with Intel's 8086/88 by using 'different hardware, different architec-

other expressions of the idea are possible, a particular expression of the idea can enjoy copyright protection, regardless of whether a copying party possesses the resources to write a different expression of the idea. *Id.* at 533.

254. 807 F.2d 1256, 1 U.S.P.Q.2d 1635 (5th Cir. 1987), *cert. denied* 484 U.S. 821 (1987).

255. *Id.* at 1262.

256. 10 U.S.P.Q.2d 1177 (N.D. Cal. 1989).

257. The Court following *NIMMER*, *supra* note 2, § 13.03[A] at 13-33 to 13-34m concluded that once the requirement of originality has been met, whether there has been merger (and if so, to what extent) goes to the issue of infringement, not copyrightability." The Court recognized that:

Although Ninth Circuit cases have not specifically discussed this issue raised by *NEC*, they appear uniformly to treat the "merger" issue as a question of whether or not there is infringement rather than copyrightability. *Id.* at 1179. (Citing *Data East USA v. EPYX*, No. 87-2294, slip op. at 6 (9th Cir. Nov. 30, 1988); *Frybarger v. Int'l Business Mach. Corp.*, 812 F.2d 525, 530 (9th Cir. 1987); *Sid & Marty Krofft Television v. McDonald's Corp.*, 562 F.2d 1157 (9th Cir. 1977); *Herbert Rosenthal Jewelry Corp. v. Kalpakian*, 446 F.2d 738, 742 (9th Cir. 1971)).

258. See Section 1(a), *supra* p. 209-10.

ture, different specifications and a different microinstruction format.'"²⁵⁹ However, because NEC lawfully duplicated the Intel hardware,²⁶⁰ the court concluded that "Intel is in no position to challenge NEC's right to use the aspects of Intel's microcode that are mandated by such hardware."²⁶¹ Further, since there were only an extremely limited number of ways to express certain short microsequences because of the hardware constraints, substantial similarity would not be found absent identical or verbatim copying, which was not the case.²⁶²

4. Compatibility With Other Software As A Constraint

In *Lotus Dev. Corp. v. Paperback Software Intl.*,²⁶³ the defendant urged that its spreadsheet program would not be commercially viable unless it copied the user interface and macro language of the leading spreadsheet program, Lotus 1-2-3. Without such copying, users would not willingly switch to defendant's product because they would have to be retrained on how to use the product and could not use their existing spreadsheets and macros created using Lotus 1-2-3.²⁶⁴ The court rejected that argument concluding that "even if . . . [defendant's program] would have been a commercial failure, and even if no other technological ways of achieving macro and menu compatibility existed, the desire to achieve 'compatibility' or 'standardization' cannot override the rights of authors to a limited monopoly in the expression in their intellectual 'work.'"²⁶⁵

In *Apple Computer, Inc. v. Franklin Computer Corp.*,²⁶⁶ the defendant contended that it had to copy Apple's operating software into the operating system software of its Apple-compatible computer "in order to ensure 100% compatibility with application programs created to run the Apple computer"²⁶⁷ and "to enable .. [its] computer to run the vast body of Apple-compatible software."²⁶⁸ The court was unpersuaded, holding that whether copying is necessary to "achieve total compatibility with independently developed application programs for the Apple II" is not relevant because such compatibility "is a commercial and competitive objective" not rele-

259. *Id.* at 1188.

260. To the extent the hardware was patented, Intel had granted NEC a license.

261. *NEC*, 10 U.S.P.Q.2d at 1188.

262. *Id.* at 1188.

263. 740 F. Supp. 37, 15 U.S.P.Q.2d 1577 (D. Mass. 1990),

264. *Id.* at 69.

265. *Id.*

266. 714 F.2d 1240, 219 U.S.P.Q. 113 (3rd. Cir. 1983).

267. *Id.* at 1245.

268. *Id.* at 1253.

vant to the copyright laws.²⁶⁹

In *Atari Games Corp. and Tengen, Inc. v. Nintendo of America, Inc. and Nintendo Co., Ltd.*,²⁷⁰ Nintendo sold its enormously popular Nintendo Entertainment System (NES) in which video game cartridges are played on a game console. Non-Nintendo cartridges cannot be used with an NES console because such cartridges are missing a copyrighted program called 1ONES which communicates with the same program in the console. Atari, however, developed and used in its cartridges a program called Rabbit which was functionally equivalent to the 1ONES program. Nintendo sued Atari alleging that the Rabbit program infringed Atari's copyright in the 1ONES program. Atari argued that the unprotectible idea of 1ONES was a program capable of being played on the present NES console and any future variation to the 1ONES program in the console. Thus, under the merger doctrine, Atari could copy any expression in the 1ONES program which was necessary to ensure such continued compatibility or functionality, or that which was "absolutely necessary to [the Rabbit's] intended purpose of rendering the Atari Games' slave chip functionally indistinguishable from the Nintendo slave chip."²⁷¹ The court disagreed. The court noted that there was authority for finding that the idea of 1ONES was as broad as "quality control for a computer," in which case the copying was clearly beyond that which was necessary to express the idea.²⁷² But the court declined to define the idea with specificity, holding simply that whatever the idea was, it did not include compatibility or functionality with *future* versions of the NES console. "The Court declines to accept the theory that Atari was entitled to copy more extensively from a copyrighted work so as to preempt efforts to recognize and reject its unauthorized cartridges."²⁷³ "The 'purpose' of being indistinguishable from a copyrighted item is not one recognized in law."²⁷⁴ "Things that are admittedly non-

269. *Id.* (note that the court was rejecting the argument raised by the defendant that the idea and expression had merged if copying was required to achieve compatibility).

270. 1991 U.S. Dist LEXIS 5519, 24 Copy L. Rep. (CCH) ¶26,703 (N.D. Cal. 1991).

271. *Id.*

272. The court, referring to *Whelan Assoc. v. Jaslow Dental Lab.*, stated:

In *Whelan*, a dental prosthetics business contracted for a program to assist with its bookkeeping. The court found that "the idea [was] the efficient organization of a dental laboratory." 797 F.2d at 1240. Anything more specific than that was therefore protectable expression. [¶] In the instant case, a comparably broad view of the program's idea might be 'quality control' for a computer.

Id.

24 Copy L. Rep. (CCH), at ¶26,703.

273. *Id.*

274. *Id.* The court cited *Apple Computer v. Franklin Computer Corp.*, (competitor's goal

functional at the time of copying are not made functional by the infringer's efforts to preempt reactions to its infringement."²⁷⁵ Once the court rejected Atari's definition of the idea, the conclusion that infringement existed was inevitable, based on admissions previously made by Atari.²⁷⁶

5. Commentary

As *NEC* and *Plains Cotton* demonstrate, there are instances in which constraints will be considered in determining infringement. But if the constraints are real there would generally be no need to copy constrained code from the copyrighted program. Implementing a stringent clean room procedure wherein the programmers work with a functional specification identifying the constraints will serve a developer well. Any resulting similarities will be a direct result of the constraints, not from copying. Infringement will turn on a determination of whether the developer was entitled to write code consistent with the constraints and need not also involve an evaluation as to whether what the developer copied was truly necessary to avoid running afoul of the constraints.

R. *The Right To Copy Code As Part Of The Development Of "Independent," "Non-Infringing" Code*

One common step in the process of developing a program compatible with a copyrighted program is copying the copyrighted program into a computer and generating and studying a disassembled listing of that program in order to completely understand its func-

of total compatibility with Apple products does not affect the question of merger). The court had earlier discussed *E. F. Johnson Co. v. Uniden Corp. of Am.*, in which the court stated:

To the extent that defendant premises its idea/expression contentions on the bare facts that compatibility with the [copyrighted] system was its objective, its arguments must be rejected.

Id.

275. *Id.* The court did make certain broader statements, but they appear to be dicta. For example, the court stated:

Atari is free to develop a lockout program for its own video game machines. Nintendo cannot copyright that idea. By contrast, Atari is not free to appropriate Nintendo's specific technique for "locking" its own game console.

Id.

276. The court noted that "Atari does not dispute that it could have copied less of the 10NES program to obtain a functioning 'key' program." *Id.* "Atari decided to make its cartridges 'functionally indistinguishable' from Nintendo's own games by admittedly copying more than was needed to make a game work on the [existing] NES console." *Id.* Thus, Nintendo had shown a likelihood of proving infringement at trial, and the court granted Nintendo's motion for preliminary injunction.

tionality. The making of that initial copy constitutes an infringement unless there is some recognized exception.

1. Judicially-Based Exceptions

A few cases have indicated that copying for reverse engineering purposes is permissible without setting forth any statutory basis therefor. For example, in *E.F. Johnson Co. v. Uniden Corp. of America*,²⁷⁷ the court, though finding that defendant had infringed plaintiff's copyright, validated reverse-engineering of code as one step in the development of an independent compatible program, stating that "dumping and analyzing competitors' programs is a standard practice in the industry" and "[h]ad Uniden contented itself with surveying the general outline of the EFJ program, thereafter converting the scheme into detailed code through its own imagination, creativity and independent thought, a claim of infringement would not have arisen" since "defendant may have permissibly dumped, flow charted, and analyzed plaintiff's code . . ."²⁷⁸

Another case in which copying for reverse engineering was sanctioned is *NEC Corp. v. Intel Corp.*²⁷⁹ In *NEC*, NEC admitted that the writer of its microcode for its V20/V30 microprocessors had previously studied a disassembled listing he had made of Intel's copyrighted microcode for its 8086/88 microprocessors. In a preliminary version of the NEC microcode, several microsequences were "almost identical" or "very similar" to its counterpart in the Intel microcode and the court assumed that such was because of direct copying using the disassembled listing of the Intel microcode. However, the NEC programmer rewrote those microsequences in the final version of the microcode version so that the result was code no longer substantially similar to its Intel counterpart. The court noted that "NEC's final version of the challenged microcode . . . [is] the only one against which a claim of infringement may be

277. 623 F. Supp. 1485, 228 U.S.P.Q. 891 (D. Minn. 1985).

278. The full quote is:

The mere fact that defendant's engineers dumped, flow charted, and analyzed plaintiff's code does not, in and of itself, establish pirating. As both parties' witnesses admitted, dumping and analyzing competitors' programs is a standard practice in the industry. Had Uniden contented itself with surveying the general outline of the EFJ program, thereafter converting the scheme into detailed code through its own imagination, creativity and independent thought, a claim of infringement would not have arisen. . . . While defendant may have permissibly dumped, flow charted, and analyzed plaintiff's code, it could not permissibly copy it. *Id.* at 1501 n.17.

279. 10 U.S.P.Q.2d 1177 (N.D. Cal. 1989).

directed.”²⁸⁰ The court provided no explanation as to why the initial copying was permissible. Instead, the court relied on prior decisions holding that a defendant may avoid infringement by intentionally making sufficient changes in a work which would otherwise be regarded as substantially similar to that of the plaintiff’s.²⁸¹ While that may technically be true, it misses the mark. Unless otherwise excepted, the initial copying would be an infringement and the plaintiff might then be entitled to a recovery based on defendant’s sales of the final version developed using the infringing copy since profits on sales of the final version would arguably be “attributable to the [initial] infringement” and losses suffered by the copyright owner would arguably be “as a result of the [initial] infringement.”²⁸²

In *NEC*, NEC later developed a clean room version of its microcode apparently not at issue in the lawsuit. In determining the alternative ways of writing the code to accomplish the function of the subject microcode, the court considered NEC’s clean room microcode and concluded that “[t]he Clean Room microcode constitutes compelling evidence that the similarities between the NEC microcode and the Intel microcode resulted from constraints” and thus such similarity was insufficient to establish substantial similar-

280. *Id.* at 1186.

281. The Court stated:

In *See v. Duran*, the court affirmed the granting of summary judgment for the defendant, the opinion of the court noting that the plaintiff had sought to obtain “early drafts of defendant’s play on the theory that they might reflect copying from plaintiff’s play that was disguised or deleted in later drafts. Copying deleted or so disguised as to be unrecognizable is not copying.” *See also Eden Toys, Inc. v. Marshall Field & Co.*, in which the opinion observed that “‘a defendant may legitimately avoid infringement by intentionally making sufficient changes in a work which would otherwise be regarded as substantially similar to that of the plaintiffs.’” *Id.* at 1186-87.

282. 17 U.S.C. § 504(b) provides that “[t]he copyright owner is entitled to recover the actual damages suffered by him or her as a result of the infringement, and any profits of the infringer that are attributable to the infringement and not taken into account in computing the actual damages.” This would be analogous to the situation encountered in *Robert R. Jones Assoc., Inc. v. Nino Homes*, 858 F.2d 274, 8 U.S.P.Q.2d 1224 (6th Cir. 1988). In *Nino Homes* the defendant infringed plaintiff’s copyright in its architectural plans by copying those plans. The defendant built homes in accordance with the copied, infringing plans. The homes built by defendant were not an infringement of plaintiff’s copyright since a home is a “useful article” which defendant is free to make and use; it is not copyrightable subject matter. Nevertheless, the Court held that “the damages recoverable by the copyright owner include the losses suffered as a result of the infringer’s subsequent use of the infringing copies” *Id.* at 280. The Court held that but for the initial infringement plaintiff would have sold the homes instead of defendant and, therefore, awarded plaintiff the profit it would have made on such sales.

ity and infringement.²⁸³ In so ruling, the court commented that “[t]he Clean Room microcode was governed by the same constraints of hardware, architecture and specifications as applied to the NEC microcode, and copying clearly was not involved.”²⁸⁴ This comment is significant because it lends further support to the concept that intermediate copying is permissible as that was a step in development of the clean room microcode.²⁸⁵

2. Statutory-Based Exception: 17 U.S.C. § 117(1)

In developing its computer program, the defendant in *Vault Corp. v. Quaid Software, Ltd.*²⁸⁶ purchased the plaintiff’s copyrighted program and copied it into computer memory to analyze how it operated. The plaintiff alleged that such copying violated its copyright. However, the court held that such copying was permissible under 17 U.S.C. section 117(1) which provides that “it is not an infringement for the owner of a copy of a computer program to make . . . another copy . . . of that computer program provided . . .

283. *NEC*, 10 U.S.P.Q.2d at 1188.

284. *Id.*

285. *Id.* The full passage of the decision relating to the Clean Room microcode is as follows:

The Clean Room microcode constitutes compelling evidence that the similarities between the NEC microcode and the Intel microcode resulted from constraints. The Clean Room microcode was governed by the same constraints of hardware, architecture and specifications as applied to the NEC microcode, and copying clearly was not involved. Mr. McKeivitt, who created the 8086 microcode for Intel, readily acknowledged that the microarchitecture of the 8086 microprocessor affected the manner in which he created his microcode, and that he would expect that another independently created microcode for the 8086 would have some similarities to his. [Record citation omitted.] Accordingly, the similarities between the Clean Room microcode and the Intel microcode must be attributable largely to the above mentioned constraints. But the similarities between the Clean Room microcode and Rev. 2 are at least as great as are the similarities between the latter and the Intel microcode. This is made evident by an examination of Exhibit 705. The strong likelihood follows that these similarities, also resulted from the same constraints.

Mr. McKeivitt also acknowledged that he would expect that independently created microcode for the 8086 would have fewer similarities in the longer sequences than in the shorter sequences because “there is more opportunity for the longer sequences to be expressed differently.” [Record citation omitted.] This is exactly what occurred here; the longer sequences in Rev. 2 and Intel’s microcode are not nearly so much alike as are the shorter sequences.

In light of the foregoing, it is reasonable to conclude that the same constraints, rather than copying, were responsible for the principal similarities between Rev. 2 and the Intel microcode. *Id.*

286. 655 F. Supp. 750 (E.D. La. 1987), *aff’d* 847 F.2d 255, 7 U.S.P.Q.2d 1281 (5th Cir. 1988).

that such a new copy . . . is created as an essential step in the utilization of the computer program in conjunction with a machine and that it is used in no other manner" The plaintiff had argued that section 117(1) should be limited to making a copy of a program as an essential step in the utilization of the computer program *for its intended purpose*, not for an unintended purpose such as making a copy to develop another program. The court rejected that argument because "Section 117(1) contains no language to suggest that the copy it permits must be employed for a use intended by the copyright owner."²⁸⁷ It should be noted that the section 117(1) exception is an affirmative defense and, therefore, the defendant bore the burden of proving applicability of the exception.²⁸⁸ Thus, *Vault* articulates a statutorily-based legal exception, section 117(1), which permits copying as an essential step in reverse engineering one's own code, thereby, insulating the final version of the code developed using the copied program.

*a. But The Statutory Exception May Not Extend
To Making A "Hardcopy" Of The
Copyrighted Program*

There was no evidence in *Vault* that the defendant ever made any copy of the copyrighted program other than the copy inputted into the computer's memory. The only issue presented was the legality of copying the copyrighted program into computer memory to analyze the manner in which the program operated.²⁸⁹ There was no evidence that the defendant "ever made a physical copy of [the copyrighted program]."²⁹⁰ Thus, it remained an open question whether making a hardcopy for analysis or a disassembled listing, would be permissible. That question was answered in *Allen-Myland, Inc. v. International Business Machines Corp.*²⁹¹

Allen-Myland centered around the microcode for IBM's 3090 mainframe computer systems. The 3090 mainframes included many different models. An individual 3090 computer system could be *reconfigured* into a different model or could be *split* into two

287. *Id.* at 261.

288. See *Allen-Myland v. Int'l Business Mach. Corp.*, 746 F. Supp. 520, 535-36, 16 U.S.P.Q.2d 1817 (E.D. Pa. 1990).

289. *Vault Corp. v. Quaid Software*, 847 F.2d 255, 257 & 261, 7 U.S.P.Q.2d 1281 (5th Cir. 1988).

290. The district court decision explains that "There was no evidence introduced that Quaid has ever made a physical copy of PROLOK which could be sold or loaned to others." *Id.* at 755.

291. 746 F. Supp. 520, 16 U.S.P.Q.2d 1817 (E.D. Pa. 1990).

lower performance 3090 computer systems. In order to reconfigure or split a 3090 computer system, it was necessary to change the system hardware *and* the copyrighted system microcode. On request, IBM sold new microcode versions to existing customers desiring to reconfigure or split their systems. AMI was engaged in the business of reconfiguring and splitting 3090 computer systems for a fee. For use in reconfiguring and splitting systems, AMI compiled a library of 3090 microcode tapes by making unauthorized copies of 3090 microcode and, where necessary, creating modified versions of the copied microcode to fit a particular need sometimes by combining code from a number of original microcodes.²⁹² To reconfigure or split a customer's machine, AMI would thus copy a version from its library onto its customer's machine.

The *Allen-Myland* court held that AMI's copying and adapting "to accumulate a library of the 3090 microcode, or to make copies of the 3090 microcode for reconfigured or split 3090 systems," was not done as "an essential step in the utilization of the computer program [microcode]."²⁹³ Relying on the CONTU Final Report²⁹⁴ and prior precedent,²⁹⁵ the court concluded that section 117(1) permits only the copying of a program into a computer's memory in order to permit the computer to execute the program. The court opined that the Fifth Circuit in *Vault*²⁹⁶ "held only that § 117(1) permits the loading of a program into a computer's memory even if the program was then analyzed in memory for a purpose unintended by the copyright owner."²⁹⁷ That might be a fair reading of *Vault* and of the statute which provides "that such a new copy or adaptation is created as an essential step in the utilization of the

292. For example, from tapes ordered from IBM or supplied by a computer leasing company, or supplied with systems made available to AMI by customers for whom it was performing a reconfiguration or split.

293. *Allen-Myland*, 746 F. Supp. at 536.

294. The CONTU Final Report, *supra* note 16, stated at 13 with reference to section 117(1):

Because the placement of a work into a computer is the preparation of a copy, the law should provide that persons in rightful possession of copies of programs be able to use them freely without fear of exposure to copyright liability. . . . One who rightfully possesses a copy of a program, therefore, should be provided with a legal right to copy it to that extent which will permit its use by that possessor. This would include the right to load it into a computer . . .

295. See *Micro-Sparc, Inc. v. Amtype Corp.*, 592 F. Supp. 33, 34-35, 223 U.S.P.Q. 1210 (D. Mass. 1984) ("In our opinion, [section 117(1)] refers to the placement of a program into a computer — or, in the jargon of the trade, the 'inputting' of it. . . . The permission to copy stated in subsection (1) is strictly limited to inputting programs.").

296. *Vault*, 847 F.2d at 261.

297. *Allen-Myland*, 746 F. Supp. at 536.

computer program in conjunction with a machine and that it is used in no other manner." Nevertheless, the *Allen-Myland* court should have limited its holding to the conclusion that "[t]he *Vault* Court did not address the type of copying in which AMI has engaged, i.e. making copies on tape and on a hard disk to build a library of different versions of the program and to supply with a computer other than the one with which the program originally was supplied."²⁹⁸ Such copying is certainly contrary to the express language of the statute which provides that:

Any exact copies prepared in accordance with the provisions of this section may be leased, sold, or otherwise transferred, along with the copy from which such copies were prepared, only as part of the lease, sale or other transfer of all rights in the program. Adaptations so prepared may be transferred only with the authorization of the copyright owner.²⁹⁹

That was not being done by AMI. AMI was not transferring the original copy with its library copy to anyone. The original copy was frequently returned to its source. Or, if the original copy was that of its customer, the library copy was maintained by AMI.

A case relied upon by the *Allen-Myland* court was *Micro-Sparc, Inc. v. Amtype Corp.*³⁰⁰ The plaintiff in *Micro-Sparc* sold a computer magazine including a listing of certain computer programs. Plaintiff authorized magazine purchasers to type the computer programs into their machines or to purchase for a fee diskettes containing such programs for input into their machines. Defendant typed the programs into a machine, stored them on a master diskette, and sold copies to magazine purchasers at a price far less than plaintiff was charging. Plaintiff sued for infringement of the copyright in the programs. Defendant argued that its conduct was authorized under section 117(1). Defendant asserted that the purchaser was the owner of a copy of the computer program in the magazine and could type the program into his machine as "an essential step in the utilization of the computer program." That was not disputed. Defendant further argued that the purchaser could authorize defendant to make the diskette copy for inputting into his computer. The court might have agreed that the purchaser could authorize defendant to type the copy into his computer as "an essential step in the utilization of the computer program," but the court held that the purchaser could not authorize the prior making

298. *Allen-Myland*, 746 F. Supp. at 536.

299. 17 U.S.C. § 117.

300. *Micro-Sparc*, 592 F. Supp. at 34-35, 223 U.S.P.Q. 1210 (D. Mass. 1984).

of a diskette version which was not "an essential step in the utilization of the computer program." According to the court, "[i]n our opinion, [section 117(1)] refers to the placement of a program into a computer—or, in the jargon of the trade, the 'inputting' of it. . . . The permission to copy stated in subsection (1) is strictly limited to inputting programs."³⁰¹ Thus, while section 117(1) might authorize the typing into a computer by defendant on behalf of a purchaser, it did not authorize the initial making of a diskette copy.

b. The Interplay With The Archival Exception of § 117(2) And The Court's Strained Attempts To Limit The Applicability Of The § 117 Exceptions

The defendant in *Micro-Sparc* sought to rely on the archival exception of section 117(2) for the making of the diskette copy.³⁰² But the court held that while section 117(2) would allow the purchaser to make an archival disk copy of the typed in program to prevent the typed-in copy from "destruction or damage by mechanical or electrical failure," "[s]ubsection (2) does not, however, permit the purchaser to authorize the defendant to put Nibble programs on disks for archival purposes."³⁰³ According to the court, a customer who lawfully types in to make a copy under section 117(1) can make a backup archival copy under section 117(2) to prevent the typed in copy from "destruction or damage by mechanical or electrical failure."³⁰⁴ But here, "the purchaser has not first created a 'destructible' or 'damageable' copy" since the only copy he had was the hardcopy in the magazine.³⁰⁵ Thus, the disk copy made by defendant was not to prevent "destruction or damage by mechanical or electrical failure" of a legally made copy.

The court is applying convoluted reasoning. The purchaser had the right under section 117(1) to input a copy into its computer as an essential step in the utilization of the program. Defendant did that for the purchaser through a multi-step process—type it into his own computer, copy it on disk and provide it to customer for input.

301. *Micro-Sparc*, 592 F. Supp. at 35.

302. 17 U.S.C. § 117(2) provides that "Notwithstanding the provisions of § 106, it is not an infringement for the owner of a copy of a computer program to make or authorize the making of another copy or adaptation of that computer program provided: . . . (2) that such new copy or adaptation is for archival purposes only and that all archival copies are destroyed in the event that continued possession of the computer program should cease to be rightful.

303. *Micro-Sparc*, 592 F. Supp. at 35.

304. *Id.*

305. *Id.*

The purchaser had the right to make a disk copy under section 117(2) to protect against destruction of the typed in copy. Defendant did that as well—the original disk copy. What the court really objected to was the ease by which defendant could engage in the profitable business of making archival copies and machine copies of the copyrighted program for all purchasers of plaintiff's magazine, thereby eating away at plaintiff's profits from sales of diskette versions of the programs. After all, the defendant only had to type up the program once rather than typing up the program for each magazine subscriber contracting for the defendant's services.

c. Other Substantial Limitations On The Exercising Of Your § 117(1) Statutory Right

In *Apple Computer, Inc. v. Formula International, Inc.*,³⁰⁶ the Ninth Circuit affirmed the district court's grant of preliminary injunction to plaintiff Apple against defendant Formula relating to alleged copyright infringement of two operating system computer programs for the Apple II Computer which Apple claimed were infringed by Formula's two operating system computer programs for the Formula Pineapple Computer. Subsequently, the district court found Formula to be in contempt of the preliminary injunction for buying floppy diskettes with the two Apple programs from an authorized Apple licensee, copying the program into ROMs on a one-to-one basis, one program on a diskette to one ROM with the program without multiple copies, and selling computers and computer kits with the ROMs.³⁰⁷ According to the district court, although 17 U.S.C. section 117 would allow copying of the programs "as an essential step in the utilization of the computer program in conjunction with a machine" as well as for archival purposes, that right is a personal right limited to the possessor/Formula and thus, did not authorize copying for resale to allow a third party purchaser to use the computer program.³⁰⁸

306. 725 F.2d 521, 218 U.S.P.Q. 47 (9th Cir. 1983).

307. *Apple Computer, Inc. v. Formula Int'l, Inc.*, 594 F. Supp. 617, 224 U.S.P.Q. 560 (C.D. Cal. 1984).

308. The Court concluded:

The Court extracts from these authorities these principles concerning Section 117:

- 1) Only an *owner-user* of a computer who rightfully owns a copy of the copyrighted program is authorized to make another copy of that program, and this copying must be necessary for him to use the copyrighted program in *his* computer;
- 2) The copy authorized by Section 117 must be made only for the owner-user's internal use and must be destroyed when the original copyrighted

The court further found that copying of the diskette was not "an essential step in the utilization of the computer program," and thus section 117 was inapplicable because the diskette could be used directly with the computer—temporarily copied into RAM for actual use—rather than permanently copied into ROM. Copying into ROM was not an essential step in the utilization of the program. According to the court, "the type of copying must be no more permanent than is reasonably necessary" since "'[e]ssential' means indispensable and necessary."

3. Statutory-Based Exception: 17 U.S.C. § 107

In *Allen-Myland, Inc. v. International Business Machines Corp.*,³⁰⁹ AMI also argued that its copying activities were permissible under 17 U.S.C. section 107. Section 107 provides that the fair use (e.g., copying) of a copyrighted work (e.g., computer program) is permissible and does not constitute copyright infringement and lists four factors to be considered in whether the use (e.g., copying) is a fair use.³¹⁰ However, all four listed factors militated against a finding of fair use.³¹¹ Nevertheless, AMI argued that its copying activities were a form of reverse engineering which, though not listed as a factor in section 107, should be a permissible fair use under the statute. The court recognized that factors other than the four listed could be considered but elected not to determine whether copying for reverse engineering was a fair use under section 107. Instead, the court rejected AMI's fair use contentions because "[t]he evidence presented establishes that AMI in fact has not en-

work is resold; (3) The copy thus made by the owner-user cannot be made accessible to others.

Id. at 621-62.

309. 746 F. Supp. 520, 534-35, 16 U.S.P.Q.2d 1817 (E.D. Pa. 1990).

310. 17 U.S.C. § 107 provides, in pertinent part:

Notwithstanding the provisions of section 106, the *fair use* of a copyrighted work, including such use by reproduction in copies . . . , for purposes such as . . . research, is not an infringement of copyright. In determining whether the use made of a work in any particular case is a *fair use* the factors to be considered shall include -

(1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;

(2) the nature of the copyrighted work;

(3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and

(4) the effect of the use upon the potential market for or value of the copyrighted work.

311. Specifically, (1) the copying was for commercial purposes; (2) the copyrighted microcode was more creative than informational; (3) either all or a large portion of the copyrighted microcode was copied; and (4) IBM lost revenue as a result of AMI's activities.

gaged in reverse engineering”³¹²

In view of the foregoing, it remains an open question whether copying for reverse engineering may be a fair use immunized from liability under section 107 even though application of all four statutorily listed factors militate against a finding of fair use. It should be noted here that the fair use exception, like the section 117(1) exception, is an affirmative defense and, therefore, the defendant bears the burden of proving applicability of the exception.³¹³

4. Atari/Nintendo: Maybe Reverse Engineering Code Is No Longer Legal

In *Atari Games Corp. and Tengen, Inc. v. Nintendo of America, Inc. and Nintendo Co., Ltd.*,³¹⁴ Nintendo argued that Atari infringed its copyright program copyright by making direct machine code copies of its copyrighted program and a pseudo-source copy therefrom. These copies were intermediate and used to develop what Atari would contend was a non-infringing, independent program for sale in Atari products. Atari argued that this reverse engineering was permissible to enable one to read and use the ideas in the program. The court entered an order on or about March 27, 1991, holding that Nintendo had shown a likelihood of proving at trial that such intermediate copying constituted copyright infringement and enjoining further intermediate copying. The court also found the final version to likely be infringing.

On April 1, 1991, Atari moved to modify the original injunction order to allow such intermediate copying presumably so as to permit Atari to redevelop its program using an adequate clean room procedure, resulting in a non-infringing program which it could sell in its products. However, in the court's amended opinion and order entered April 11, 1991, the court maintained its holding that Nintendo had shown a likelihood of proving at trial that such intermediate copying constituted copyright infringement, and continued the clause of the injunction prohibiting such intermediate copying.

An open issue remains, however, whether the court would have enjoined Atari's sale of the final product if it was non-infringing or not substantially similar, as being the fruit of the unlawful intermediate copying. In the primary case relied upon by the court for the proposition that intermediate copying is impermissible, the final product was itself infringing and therefore, the injunc-

312. *Allen-Myland*, 746 F. Supp. at 535.

313. *Allen-Myland*, 746 F. Supp. at 534.

314. 1991 U.S. Dist LEXIS 5519, 24 Copy L. Rep. (CCH) ¶26,703 (N.D. Cal. 1991).

tion naturally extended to that product.³¹⁵

If later courts disregard pre-*Atari* precedent, choosing instead to follow the holding in *Atari* that intermediate copying is unlawful, that could drastically effect the development processes of firms engaged in the creation of compatible and clone software as their clean room procedures would no longer provide a shield against a copyright infringement claim. Moreover, programs already on the market developed with such a clean room procedure and heretofore immune from suit could be the target of attack from the maker of the cloned software fearing the growing competition and hoping for a windfall damage award to breathe new life into ailing balance sheets.³¹⁶

S. *The Right To Adapt A Program For Internal Use—17* *U.S.C. § 117(1)*

It is not all that uncommon for a business to purchase or license an expensive software package only to later realize that revisions or enhancements are necessary for optimal use of the product. Furthermore, since many businesses lack the programming expertise to modify the program in-house, they must engage a program-

315. The court stated with reference to an argument made by Atari as to the correct interpretation of *SAS Inst. v. S&H Computer Sys., Inc.*, 605 F. Supp. 816, 225 U.S.P.Q. 916 (M.D. Tenn. 1985):

Further, the Court disagrees with Atari's reading of *SAS Institute, supra*. Atari repeatedly asserts that *SAS* was limited to a finding at trial that the alleged infringer's final program was substantially similar to the copyrighted program. Atari Mem. Opp. at 38 and 49. In fact, the court in *SAS* explicitly addressed the intermediate copying argument. *SAS Institute* had alleged that "in the course of preparing its product, S & H made an unknown number of unauthorized, and thus infringing, exact copies of some or all of the *SAS* source code." *Id.*, at 828. The court had ruled on this argument in *SAS*'s favor on a motion for partial summary judgment, "subject only to proof of validity of the copyright." *Id.* Validity having been established at trial, the court "adopted and incorporated" unconditionally the findings of infringing intermediate copying. Atari has not adequately addressed this point, thereby suggesting Nintendo's likelihood of success on the merits regarding intermediate copying. *SAS*, of course, is also adverse to Atari on the issue of a final derivative work from a competitor's "targeted" program. *Id.* at 831.

24 Copy L. Rep. (CCH) ¶26,703.

In *SAS*, the court proceeded to find the end product to be an infringing derivative work apparently because absent such a finding liability would not extend to the final product notwithstanding the intermediate copying.

316. The defendants filed an appeal from the entry of the preliminary injunction, and the district court entered an order on May 20, 1991, staying the injunction pending the appeal. The stay was granted based primarily on evidence that the injunction would effectively put defendant Tengen out of business, while Nintendo would sustain minimal harm if the injunctions effect is delayed. Defendants were required to post a bond of \$3,000,000.

mer to do the modifications. Technically speaking, the end product of such modifications is a new program which is a derivative of the original, copyrighted program. But the copyright owner is granted exclusive right "to prepare derivative works based upon the copyrighted work."³¹⁷ Thus, absent some exception, the purchaser and the programmer have combined to infringe the copyright in the original program. However, 17 U.S.C. section 117(1) provides that "it is not an infringement for the owner of a copy of a computer program to make or authorize the making of . . . [an] adaptation of that computer program provided . . . that such . . . adaptation is created as an essential step in the utilization of the computer program in conjunction with a machine and that it is used in no other manner."³¹⁸ Hence, the purchaser could lawfully authorize the outside programmer to adapt the original program to meet his unique needs provided the "adaptation" resulting therefrom was only used internally. That was the court's holding in *Foresight Resources Corp. v. Pfortmiller*.³¹⁹

In *Foresight*, Hall-Kimball purchased Foresight's copyrighted computer program called Drafix 1+. Hall-Kimball engaged Pfortmiller, a programmer, to add five new files to the program thereby creating a derivative program which was called HK Digitizer which was used by Hall-Kimball solely in-house in connection with its business. The court ruled that Pfortmiller's enhancement of the Drafix 1+ program was an adaptation within the meaning of section 117 and thus permissible.³²⁰

1. But Don't Combine Two Copyrighted Programs

In *Allen-Myland, Inc. v. International Business Machines Corp.*,³²¹ the court held that the adaptation right under section 117 was limited to adapting an individual program and did not extend

317. 17 U.S.C. § 106(2). The term "derivative work" is defined in the 1976 Act as "a work based upon one or more preexisting works, such as a translation . . . or any other form in which a work may be recast, transformed or adapted." 17 U.S.C. § 101.

318. 17 U.S.C. § 117(1).

319. 719 F. Supp. 1006, 13 U.S.P.Q.2d 1721 (DC Kan. 1989).

320. The copyright owner, Foresight, claimed that the making of the adaptation violated the license agreement accompanying the Draft 1+ program. The Court cited the *Vault* case as "some reason to question the enforceability of the provision in the Drafix 1+ licensing agreement that prohibits enhancements." *Foresight*, 719 F. Supp. at 1010. In *Vault Corp. v. Quaid Software, Ltd.*, 847 F.2d 255, 7 U.S.P.Q.2d 1281 (5th Cir. 1988), the court held that a shrink wrap license agreement was an unenforceable contract of adhesion. But even if the provision preventing enhancements was unenforceable, other provisions of the license might be valid and Hall-Kimball might still be a "licensee" of the software, not an "owner." If that were the case, the literal language of section 117 would not be applicable.

321. *Allen-Myland*, 746 F. Supp. at 536-37, 16 U.S.P.Q.2d 1817 (E.D. Pa. 1990).

to making a modified program by combining code from two copyrighted programs of the same copyright owner. According to the *Allen-Myland* court:

But AMI's modified versions of the 3090 microcode are not adaptations of the 3090 microcode permissible under section 117(1). The evidence establishes that AMI produces copies of the 3090 microcode for use on reconfigured or split 3090 systems by making rainbow copies from 3090 microcode copies taken from various 3090 systems, or by making changes in the 3090 microcode provided with one 3090 system to produce a partial duplicate of a copy from another system. . . . Such activity is not permissible adaptation under section 117, since it produces modified 3090 microcode only by making partial duplicates of two or more different versions of the 3090 microcode produced by IBM.³²²

T. *The Right To Make Archival Copies—17 U.S.C. § 117(2)*

17 U.S.C. section 117(2) provides that "it is not an infringement for the owner of a copy of a computer program to make or authorize the making of another copy or adaptation of that computer program provided . . . (2) that such new copy or adaptation is for archival purposes *only* and that all archival copies are destroyed in the event that continued possession of the computer program should cease to be rightful." Two recent cases explain some of the metes and bounds of the rights granted by section 117(2).

In *Allen-Myland, Inc. v. International Business Machines Corp.*,³²³ the court applied a literal reading of section 117(2), stating that it immunizes from infringement copies made "for archival purposes *only*". That interpretation is consistent with the CONTU Final Report which states that section 117(2)'s objective is to give the rightful possessor of a computer program "the right . . . to prepare archival copies of it to guard against destruction or damage by mechanical or electrical failure . . . [b]ut this permission would not extend to other copies of the program."³²⁴ Since the copies made by AMI "performed functions in addition to archival functions," such as being "actively operated [in] reconfigured or split 3090 systems," the copies fell outside of section 117(2).

In *Atari, Inc. v. JS & A Group, Inc.*,³²⁵ Atari sold a home com-

322. *Allen-Myland*, 746 F. Supp. at 537.

323. *Allen-Myland*, 746 F. Supp. at 537, 16 U.S.P.Q.2d 1817 (E.D. Pa. 1990).

324. CONTU Final Report, *supra* note 16, at 13.

325. 597 F. Supp. 5, 9 (N.D. Ill. 1983).

puter video game with video game cartridges. The cartridge included ROMs containing the video game program. Defendant sold a machine for copying the contents of the ROMs into ROMs in a blank cartridge. Defendant argued that the customer was authorized to make the copy under section 117(2) for archival purposes. Therefore, the customer did not infringe and defendant could not be guilty of contributing to the infringement. The court disagreed. According to the court, relying on the CONTU Final Report, section 117(2) was intended to give the rightful possessor of a computer program "the right . . . to prepare archival copies of it to guard against destruction or damage by mechanical or electrical failure . . . [b]ut this permission would not extend to other copies of the program."³²⁶ Thus, the exception is limited to computer programs which are subject to "destruction or damage by mechanical or electrical failure." The court stated:

Where, and only where, a medium may be destroyed by mechanical or electrical failure, the archival exception protects the owners of programs stored in that medium by granting them the right to make backup copies.³²⁷

The ROMs on the other hand, which cannot be reprogrammed or erased, were subject only to physical failure similar to a paper medium, but not mechanical or electrical failure. Thus, section 117(2) was not applicable.

U. "Owner" Versus "Rightful Possessor" Under 17 U.S.C. § 117

17 U.S.C. section 117 speaks of the right of an owner of a copy of a computer program to have a copy or adaptation made as an essential step in the utilization of the program or for archival purposes. The term owner does not literally cover a licensee. Of course, a court may reach the conclusion after applying accepted principles of statutory construction that the term owner should be interpreted broadly so as to include licensees. But such a conclusion might be contrary to the legislative history and the intent of Congress.

The language for section 117 was proposed by CONTU. The proposed language was precisely adopted by Congress with one and only one change. Congress, without explanation, inserted the word owner for the term rightful possessor proposed by CONTU. One

326. CONTU Final Report, *supra* note 16, at 13.

327. *Atari*, 597 F. Supp. at 9.

could readily argue that this change indicated a Congressional intent to limit section 117 to owners of copies of a computer program, not other rightful possessors such as licensees.

In *Allen-Myland, Inc. v. International Business Machines Corp.*,³²⁸ discussed above, it was not clear whether the defendant AMI or those for whom it provided services had purchased or licensed IBM's microcode for its 3900 series computer system. Thus, an issue was whether AMI or those for whom it provided services was a owner of the microcode within the meaning of section 117. If neither was an owner, AMI had no direct rights to adapt the microcode, and the customer had no right to authorize AMI to adapt for its benefit. The court ducked the issue, however, stating "[b]ecause . . . I find that AMI's copying does not fall within either of the two definitions of permissible copying in section 117, I do not decide the[se] questions"³²⁹

V. *Right To Authorize Under 17 U.S.C. § 117*

In *Allen-Myland, Inc. v. International Business Machines Corp.*,³³⁰ discussed above, the court indicated that even if a customer of IBM was the owner of the IBM microcode and thus, had an adaption right under section 117, there was still a question "whether the parties for whom AMI performs engineering services may delegate any rights they may have to copy or adapt under § 117 to AMI."³³¹ However, as to the customer's individual copies, the question is answered by the language of the statute itself. "It is not an infringement for the owner of a copy of a computer program to make *or authorize the making* of another copy or adaptation of that computer program"

VI. AFFIRMATIVE DEFENSES

A. *Fraud On The Copyright Office Defense To An Infringement Claim*

17 U.S.C. section 410(c) provides:

In any judicial proceedings the certificate of a registration made before or within five years after first publication of the work shall constitute prima facie evidence of the validity of the copyright and of the facts stated in the certificate. The evidentiary weight

328. 746 F. Supp. 520, 16 U.S.P.Q.2d 1817 (E.D.Pa. 1990).

329. *Id.* at 536 n.15.

330. 746 F. Supp. 520, 16 U.S.P.Q.2d 1817 (E.D. Pa. 1990).

331. *Id.* at 536 n.15.

to be accorded the certificate of a registration made thereafter shall be within the discretion of the court.

This presumption of validity is rebuttable.³³² In increasing numbers, defendants charged with infringement seek to rebut the presumption by showing that the copyright owner committed a fraud on the Copyright Office through inaccuracies, usually material misstatements or omissions, in its application for registration. The well-settled law has been that the presumption of copyright validity may not be overcome on the basis of fraud on the Copyright Office without proof that inaccuracies in the copyright application were intentional.³³³ Prejudice to defendant from the alleged fraud is also a prerequisite.³³⁴ That is, “[a]bsent intent to defraud and prejudice, inaccuracies in a copyright registration do not bar actions for infringement.”³³⁵

A straightforward application of these principles is found in a recent Ninth Circuit case, *S.O.S. Inc. v. Payday Inc.*³³⁶ The defendant in *S.O.S.* alleged that plaintiff committed fraud on the Copyright Office in its initial application for copyright registration when it identified itself as the sole author when in fact the software included programs prepared by another. The district court granted defendant summary judgment on its fraud defense. On appeal, the Ninth Circuit reversed. The Ninth Circuit explained that a fraud on the Copyright Office defense must fail absent proof that the copyright applicant intentionally made misstatements or omissions in the application with an intent to defraud the Office and proof that defendant was prejudiced as a consequence of the alleged fraud. Applying these principles, the Ninth Circuit reversed the district court’s grant of summary judgment because defendant failed to show both that the omission was done intentionally with an intent to defraud and that it was prejudiced by the omission. Despite the clearly enunciated standard for a fraud on the Copyright Office de-

332. *Apple Computer, Inc. v. Microsoft Corp.*, 18 U.S.P.Q.2d 1097, 1104 (N.D. Cal. 1991) (citing *Durham Industries, Inc. v. Tomy Corp.*, 630 F.2d 905, 908, 208 U.S.P.Q. 10 (2d Cir. 1980), and *Past Pluto Productions Corp. v. Dana*, 627 F. Supp. 1435, 228 U.S.P.Q. 919 (S.D.N.Y. 1986)).

333. *Id.* (citing *Eckes v. Card Prices Update*, 736 F.2d 859, 222 U.S.P.Q. 762 (2d Cir. 1984) and *S.O.S. Inc. v. Payday Inc.*, 886 F.2d 1081, 1086 n.5, 12 U.S.P.Q.2d 1241 (9th Cir. 1989) (the inaccuracy must have been done intentionally with an intent to defraud and the defendant must have been prejudiced)).

334. *Harris v. Emus Records Corp.*, 734 F.2d 1329, 1333, 22 U.S.P.Q. 466 (9th Cir. 1984); *S.O.S. Inc. v. Payday Inc.*, 886 F.2d 1081, 1086, 12 U.S.P.Q.2d 1241 (9th Cir. 1989).

335. *Harris*, 734 F.2d at 1333, 22 U.S.P.Q. 466 (quoted with approval in *S.O.S.*, 886 F.2d at 1086, 12 U.S.P.Q.2d 1241).

336. 886 F.2d 1081, 1086, 12 U.S.P.Q.2d 1241 (9th Cir. 1989).

fense, there appears to some confusion in applying that standard as the following two recent district court cases demonstrate.

1. Ashton-Tate

In *Ashton-Tate Corporation v. Fox Software, Inc.*,³³⁷ Ashton-Tate marketed its enormously popular line of dBASE programs. The editions, in chronological order, were dBASE II (there was no dBASE I), dBASE III, DBASE III PLUS and dBASE IV, with each edition being an improvement to its immediate predecessor. Ashton-Tate had applied for and received a certificate of copyright registration for each edition. However, several of the certificates were inaccurate. Most notably, the dBASE III was a derivative work of dBASE II. The application and the resulting registration should therefore, have stated this and claimed that the copyright registration was only for revisions and additions, not for preexisting material from dBASE II. However, the application and the registration failed to mention dBASE II and the derivative status of dBASE III, and claimed that the registration was for the entire work. Also, none of the registrations indicated that the subject program was a derivative work of an earlier public domain program called JPLDIS.³³⁸ When Ashton-Tate sued Fox for copyright infringement, Fox countered with a claim that the copyrights were invalid and unenforceable as a result of Ashton-Tate's fraud or inequitable conduct in procuring the applications. The court agreed entering an order on December 11, 1990 granting Fox's motion for summary judgment on the issue, dismissing Ashton-Tate's claims, and declaring invalid all of Ashton-Tate's copyrights on its dBASE line of programs.

337. *Ashton-Tate Corp. v. Fox Software*, 760 F. Supp. 831 (C.D. Cal. 1990) (order invalidating copyrights); *Ashton-Tate Corp. v. Fox Software*, 760 F. Supp. 831, 832, 24 Copy. L. Rep. (CCH) ¶26,714 (C.D. Cal. 1991) (order rescinding first order; only the CCH reporter includes a declaration of the Register of Copyrights which may have influenced the judge's decision to rescind his first order). Each order is only a few lines. The facts are taken from pleadings filed in the case.

338. 17 U.S.C. § 409 provides that "The application for copyright registration shall be made on a form prescribed by the Register of Copyrights and shall included . . . (9) in the case of a . . . derivative work, an identification of any preexisting work or works that it is based on or incorporates, and a brief, general statement of the additional material covered by the copyright claim being registered." The copyright forms prescribed by the Register of Copyrights have a place to include the identification of preexisting works from which a derivative work is based. Registration for a derivative computer program covers only the additions, changes, or other new material appearing in the program for the first time. Compendium II, section 323.01 (1988). The copyright forms thus include a space for setting out the Nature of Authorship which would be the entire work in most cases, but only revisions for derivative works.

The Court finds that Ashton-Tate, when it filed its original applications for copyright, repeatedly failed to disclose material information to the United States Copyright Office - that the dBase line of computer software programs was derived from JPLDIS, a public domain computer software program developed by the Jet Propulsion Laboratory, and that dBase III was derived from dBase II. [¶] The Court further finds that Ashton-Tate's repeated failure to disclose such material information was done knowingly and with an intent to deceive. [¶] The Court, therefore, finds that Ashton-Tate's copyrights on its dBase line of computer software programs are invalid as a result of its inequitable conduct.³³⁹

The decision was suspect for a number of reasons. First, the court's finding that the misstatements were made with an intent to deceive does not appear supported by the record in the case. Second, the court made no finding of prejudice to Fox which is a requirement for establishing a defense of fraud or inequitable conduct on the Copyright Office. Third, while failure to cite dBASE II in the dBASE III application was clearly an error, failure to cite JPLDIS may very well have not been error. The court made no finding that dBASE II was a derivative work of JPLDIS, and the evidence indicated that such was not the case. While a few commands were the same in the two programs and while JPLDIS may have been the inspiration for dBASE II, as the next case establishes, something more is required before one can be considered the derivative work of the other. Fourth, before the ruling, Ashton-Tate had applied for and received supplemental registrations as was its statutory right,³⁴⁰ correcting the errors and purporting to purge it of the alleged inequitable conduct. The court did not consider this in its order. Fifth, the order purports to invalidate the copyrights thereby injecting the programs into the public domain rather than merely invalidating the copyright registrations which were the subject of the complaint leaving the possibility of subsequent suits at least against third parties for infringement based on the supplemental registrations. Sixth, the order purports to invalidate copyrights in all the dBASE programs, even those programs adding significant independent copyrightable subject matter and for which there were no errors in the registration.

According to papers Ashton-Tate filed with the district court, the damage to Ashton-Tate from the court's ruling was enormous.

339. *Ashton-Tate Corp. v. Fox Software*, 760 F. Supp. 831 (C.D. Cal. 1990) (order invalidating copyrights).

340. 17 U.S.C. § 408.

The invalidated dBASE products are the company's principal assets generating over \$250 million in annual revenues, and they embodied over seven years of original development by Ashton-Tate at a cost of more than \$150 million. The copyrights, previously upheld in more than a dozen cases, are the only thing preventing others from freely copying the programs. Ashton-Tate is currently a party to nine other copyright infringement actions which may be decided adversely to it in light of the order which it may be precluded from attacking under principles of collateral estoppel. Moreover, less than one week after entry of the order, Ashton-Tate was served with a class action suit alleging Ashton-Tate overcharged its customers because of its fraudulent copyright protection.

Ashton-Tate's motion for reconsideration or clarification of the order, supported by a declaration from the U.S. Register of Copyrights and Assistant Librarian of Congress for Copyright Services was denied. The court did grant, however, Ashton-Tate's motion to certify the case for appeal under 28 U.S.C. section 1292(b).³⁴¹ Ashton-Tate then filed a petition with the Ninth Circuit for permission to appeal under Rule 5 of the Federal Rules of Appellate Procedure. Fox opposed the petition. The Ninth Circuit denied the petition. In a desperate attempt at appellate relief, in February 1991 Ashton-Tate initiated an appeal under 28 USC section 1292(a)(1) on the dubious theory that the district court's order was tantamount to the denial of a preliminary injunction motion and in mid-April filed a motion asking for summary reversal of the district court's decision.³⁴² Then, without any prior indication to the parties or their counsel, on April 18, the district court judge, with no pending motions before him, entered an order stating tersely:

The Court, having considered Ashton-Tate's motion for reconsideration, together with the moving and opposing papers,

It is Ordered that Ashton-Tate's motion for reconsideration be, and hereby is, *Granted*.

It is further Ordered that this Court's Order of December 11, 1990, be, and hereby is, *Rescinded*.

It is Further Ordered that Fox Software's motion for summary judgment based on the affirmative defense of Ashton-Tate's inequitable conduct in its dealings with the United States Copyright Office be, and hereby is, *Denied*.³⁴³

341. Fox's antitrust counterclaims prevented a final judgment from being entered.

342. At the time of this writing, the Ninth Circuit had yet to act on these filings.

343. Ashton-Tate Corp. v. Fox Software, 760 F. Supp. 831, 832, 24 Copy. L. Rep. (CCH) ¶26,714 (C.D. Cal. 1991) (order rescinding first order; only the CCH reporter in-

The attorneys for Ashton-Tate advised this author that they have no idea what prompted Judge Hatter to suddenly reverse himself when there was no pending motion before him including a motion for reconsideration since that motion had already been denied.³⁴⁴ The case will now proceed to trial where it is possible that the court will have an opportunity to revisit the inequitable conduct defense and clarify its prior rulings and the grounds and motivation behind them.³⁴⁵

2. Apple/Microsoft

*Apple Computer, Inc. v. Microsoft Corp.*³⁴⁶ was initiated when Apple filed a copyright infringement action against Microsoft and Hewlett-Packard claiming that Microsoft's Windows computer operating system software and HP's NewWave computer application software infringed Apple's copyrights in the visual displays of Apple's Macintosh computer graphic user interface. Apple's graphic user interface consists of windows, icons, pull-down menus, and other images or visual displays projected on the computer screen. Apple filed a motion for partial summary adjudication that Apple's audiovisual copyrights are valid and that the defendants' affirmative defenses should be dismissed.

One such affirmative defense was fraud on the Copyright Office. The defendants contended that Apple's failure to disclose to the Copyright Office that its works were based upon preexisting works should overcome the presumption of validity of Apple's copyright registrations. It was undisputed that the designers of Apple's graphic user interface were strongly influenced by the user interface in certain Xerox programs, Smalltalk and Star, which used a mouse, overlapping windows and icons. However, the court held

cludes the declaration of the Register of Copyrights which may have influenced the judge's decision to rescind the first order).

344. There is speculation that the declaration from the U.S. Register of Copyrights and Assistant Librarian of Congress for Copyright Services influenced the judge's decision to reverse his earlier ruling invalidating the Ashton-Tate copyrights. See Computer Industry Litigation Reporter, published by Andrews Publication, June 5, 1991 at 13124-25 ("A declaration by U.S. Register of Copyrights Ralph Oman is believed by sources to have influenced Central District of California Judge Terry J. Hatter's decision to reverse his own position and rescind a ruling that invalidated Ashton-Tate's dBASE software copyright registrations."). The declaration is reproduced in *Ashton-Tate Corp. v. Fox Software*, 24 Copy. L. Rep. (CCH) ¶26,714 (C.D. Cal. 1991).

345. Moreover, at the time of this writing, Ashton-Tate had an appeal from the original order still pending in the Ninth Circuit. While the Ninth Circuit is likely to dismiss the appeal on motion by the parties or *sua sponte*, it is at least possible that the Ninth Circuit will retain jurisdiction to decide the appeal.

346. *Apple*, 18 U.S.P.Q.2d at 1104.

that such borrowing of *ideas* does not deprive Apple's works of their presumption of copyright validity. A designer of a computer graphic user interface is not required to acknowledge sources of artistic influence. Such borrowing, according to the court, does not render the Apple works a "derivative" of the Xerox works, and therefore, failure to indicate a derivative status was not improper. The court stated that defendants' "contention that Apple's copyrighted works are derivative works is meritless." A derivative work is one which is substantially copied from a prior work. A work will be deemed a derivative work only if it would be considered an infringing work if the material which it has derived from a prior work had been taken without the consent of a copyright proprietor of such prior work.³⁴⁷ All works are derived from preexisting works to a certain degree. A derivative work within the meaning of the copyright law, however, is one which substantially borrows the expression of ideas from an existing work.³⁴⁸ Defendants provided no evidence demonstrating that Apple's works could be considered to have infringed Xerox's copyrights or that Apple's works substantially borrowed expressions of ideas from Xerox's Smalltalk or Star programs. Hence, Apple's failure to disclose the borrowed Xerox material was inadequate to overcome the presumption of validity.

Furthermore, as stated above, absent intent to defraud and prejudice, inaccuracies in copyright registration do not bar actions for infringement.³⁴⁹ Defendants submitted no evidence of Apple's intent to deceive the Copyright Office. Thus, that was another basis on which the court could find that the presumption of validity had not been rebutted.

As to the original *Ashton-Tate* decision, which had not yet been rescinded, the court stated summarily:

The parties have recently sent letter briefs to the court regarding the December 11, 1990 decision and order in *Ashton-Tate Corp. v. Fox Software, Inc.*, No. CV 88-6837 TJH (C.D. Cal. filed Dec. 12, 1990). HP relied on the legal conclusion that Ashton-Tate's failure to disclose that its programs were derived from a computer software program in the public domain invalidated Ashton-Tate's copyrights on its dBase line of computer software programs. [Footnote 15 omitted.] This court finds the two-page Ashton-Tate decision unhelpful to the resolution of the pending motions.

347. *Litchfield v. Spielberg*, 736 F.2d 1352, 1357, 222 U.S.P.Q. 965 (9th Cir. 1984).

348. *NIMMER*, *supra* note 2, § 3.01.

349. *Harris v. Emus Records Corp.*, 734 F.2d 1329, 1335, 222 U.S.P.Q. 466 (9th Cir. 1984).

Finding no evidentiary basis for defendants' claim that Apple intended to commit a fraud on the Copyright Office and finding that the Apple visual displays are not derivative of the Xerox programs, the court concluded that Hewlett-Packard failed to establish that Apple perpetrated a fraud on the Copyright Office. The affirmative defense was therefore dismissed.

B. *Copyright Misuse As A Defense To An Infringement Claim*

With ever increasing frequency, defendants charged with copyright infringement are asserting the defense of copyright misuse. They are receiving mixed results and terribly inconsistent treatment from the courts.

1. Lasercomb

In *Lasercomb America, Inc. v. Reynolds*,³⁵⁰ Lasercomb developed a program called Interact used in the manufacture of steel rule die. Lasercomb licensed copies of its Interact program to Holiday Steel. Holiday Steel made three unauthorized copies of Interact which it used on its computer systems. Holiday Steel also created a software program called PDS-1000, which was almost an exact duplicate of Interact, and marketed it as its own die-making software. Lasercomb sued Holiday Steel for, among other things, copyright infringement. In response, Holiday Steel asserted that the copyright was unenforceable because Lasercomb misused its copyright by including in its standard licensing agreement, clauses which prohibited the licensee from participating in any manner in the creation of computer-assisted die-making software for ninety-nine years.³⁵¹ At least one Lasercomb licensee had executed that standard license agreement, but Holiday Steel was not one of them.

The district court found in favor of Lasercomb, rejecting the

350. 911 F.2d 970, 15 U.S.P.Q.2d 1846 (4th Cir. 1990).

351. The allegedly offending paragraphs read:

D. Licensee agrees during the term of this Agreement that it will not permit or suffer its directors, officers and employees, directly or indirectly, to write, develop, produce or sell computer assisted die making software.

E. Licensee agrees during the term of this Agreement and for one (1) year after the termination of this Agreement, that it will not write, develop, produce or sell or assist others in the writing, developing, producing or selling computer assisted die making software, directly or indirectly without Lasercomb's prior written consent. Any such activity undertaken without Lasercomb's written consent shall nullify any warranties or agreements of Lasercomb set forth herein.

misuse defense. The Fourth Circuit reversed. It held that copyright misuse is a defense to a claim for copyright infringement just as patent misuse is a defense to a claim for patent infringement. It further held that Holiday Steel may raise the defense even though it was not a party to the standard licensing agreement and, therefore, was not itself injured by the misuse. Finally, it held that the challenged clauses constituted copyright misuse because they were against public policy even if they were not violative of any antitrust laws.

Lasercomb undoubtedly has the right to protect against copying of the Interact code. Its standard licensing agreement, however, goes much further and essentially attempts to suppress any attempt by the licensee to independently implement the idea which Interact expresses. The agreement forbids the licensee to develop or assist in developing *any* kind of computer-assisted die-making software. If the licensee is a business, it is to prevent all its directors, officers and employees from assisting in any manner to develop computer-assisted die-making software. Although one or another licensee might succeed in negotiating out the noncompete provisions, this does not negate the fact that Lasercomb is attempting to use its copyright in a manner adverse to the public policy embodied in copyright law, and that it has succeeded in doing so with at least one licensee. The language employed in the Lasercomb agreement is extremely broad. Each time Lasercomb sells its Interact program to a company and obtains that company's agreement to the noncompete language, the company is required to forego utilization of the creative abilities of all its officers, directors and employees in the area of CAD/CAM die-making software. Of yet greater concern, these creative abilities are withdrawn from the public. The period for which this anticompetitive restraint exists is ninety-nine years, which could be longer than the life of the copyright itself.

2. Atari

At issue in *Atari Games Corp. and Tengen, Inc. v. Nintendo of America, Inc. and Nintendo Co., Ltd.*³⁵² was Nintendo's three-tier program to prevent competition to its popular Nintendo Entertainment System (NES). The first tier was technological. In the NES and in the game cartridges used on the NES was a lockout security system chip. The chip prevented independent software developers

352. The opinion in *Atari Games Corp. & Tengen v. Nintendo of Am. & Nintendo Co.*, (N.D. Cal., March 5, 1991) is reproduced in the *Computer Industry Litigation Reporter*, published by Andrews Publication, March 25, 1991, at 12781-90.

from developing game cartridges for NES. Thus, only Nintendo-authorized games could be played on NES. The chip also prevented NES game cartridges from being used on non-NES entertainment systems and, therefore, Nintendo-authorized games could be used only on NES.

The second tier was intellectual property. Nintendo had a patent on the chip and a copyright in the computer program in the chip. The patents precluded others from overriding the technological obstacles without running afoul of Nintendo's intellectual property.

The third tier was contractual. Nintendo licensed third parties to develop and market specific game cartridges for the NES. But the license agreement prohibited the licensee from selling any other games, other than the specific licensed games, for use on NES systems, and prohibited the licensee from selling the licensed games for use on non-NES systems for a period of two years. Thus, while the licensee was provided the technical capability to eliminate the technological obstacles and was given a license under the intellectual property rights of Nintendo, he was contractually limited in what he could do.

Atari developed, manufactured, and sold game cartridges for use on NES without a license from Nintendo. Nintendo sued for copyright and patent infringement. Atari asserted that the provision in Nintendo's license agreement prohibiting licensees from selling the licensed cartridges for use on non-NES systems constituted patent and copyright misuse. Atari moved for summary judgment on its misuse defense. The court denied the motion, rejecting the misuse defense.

The court explained that 35 U.S.C. section 271(d) provides that a patent owner has the right to license others or refuse to license others to sell non-staples used substantially only with its patented invention, something which has no substantial use other than as a material part of a patented invention. Since, according to the court the game cartridges were such a non-staple article, the license agreement was authorized by the patent statute and did not constitute patent misuse.

As to copyright misuse, the court noted that the Ninth Circuit had not yet addressed whether or not misuse was a valid defense to a copyright infringement claim. Assuming, without holding, that the defense was available, the court held essentially that the principles in 35 U.S.C. section 271(d) were equally applicable to copyrights and therefore the copyright misuse defense would fail as well.

To the extent that *Lasercomb* was inconsistent with section 271(d), "this Court declines to follow it." Further, the offending exclusivity provision in *Lasercomb* was distinguishable. A misuse defense, if one exists, requires conduct violative of the public policy embodied in the copyright laws. In *Lasercomb*, the license prohibited the licensee from developing *any* software in a certain area for 99 years. Those restrictions, unreasonable in both scope and duration, restrained the creativity of the licensees and thus violated the public policy embodied in the copyright laws. Here, the license prohibited the licensee from developing only *specific games* for only *two years*. The licensee would be free to develop other games for other systems and to sell the licensed games for other systems after two years. The court thus concluded that "[t]he record does not demonstrate, as a matter of law, that such restrictions restrain the creativity of Nintendo licensees and thereby thwart the intent of the patent and copyright laws." Hence, the defense, at least on the record then existing, had to fail.

The court did note that a violation of antitrust law is not a prerequisite of a patent misuse defense and, by analogy, the same would be true for a copyright misuse defense assuming such did exist. In this respect, the case is consistent with *Lasercomb*. The copyright misuse defense, to the extent it exists, requires conduct violative of the public policy embodied in the copyright laws even if such conduct does not constitute an antitrust violation.

3. Allen-Myland

Lasercomb should be contrasted with *Allen-Myland, Inc. v. International Business Machines Corp.*³⁵³ In *Allen-Myland*, AMI defended a copyright infringement action by asserting that IBM had misused its copyright in violation of section 1 of the Sherman Act. The court rejected that defense on the ground that AMI had not established an antitrust violation. The court also noted that while it "need not address the question whether violation of the antitrust laws can constitute a valid defense to a claim of copyright infringement, . . . most courts which have addressed this question have held that violation of the antitrust laws cannot provide a valid defense to a copyright infringement claim."³⁵⁴ Thus, while the *Lasercomb* court held that copyright misuse requires only that the copyright owner's conduct violated the public policy embodied in the copy-

353. 746 F. Supp. 520, 531, 16 U.S.P.Q.2d 1817 (E.D. Pa. 1990).

354. The court cited NIMMER, *supra* note 2, § 13.09[A], at 13-142 to 13-144, and cases cited therein.

right laws even though such conduct does not constitute an anti-trust violation and while the *Atari* court agreed assuming, without holding, that copyright misuse is a valid defense to a charge of copyright infringement, the *Allen-Myland* court held that if the defense is available at all it requires that the copyright owner's conduct constitutes an antitrust violation.

VII. FURTHER, IMPORTANT RECENT EVENTS

A. *Licensee Fraud*

In *Lasercomb America, Inc. v. Reynolds*,³⁵⁵ Lasercomb developed a program called Interact used in the manufacture of steel rule die. Lasercomb licensed copies of Interact to Holiday Steel. Holiday Steel made three unauthorized copies of Interact which it used on its computer systems. Holiday Steel also created a software program called PDS-1000, which was almost an exact duplicate of Interact, and marketed it as its own die-making software. Lasercomb sued Holiday Steel for, among other things, fraud "at the time they sought to purchase a license to use the software at the Holiday plant," by representing to Lasercomb that they would preserve Lasercomb's copyright and proprietary rights in Interact. The district court found that Lasercomb had established fraud by showing that defendants made various false representations on which Lasercomb reasonably relied in continuing its relationship with Holiday Steel, giving the defendants the opportunity to make unlawful copies of the software. Thus, the Fourth Circuit affirmed and awarded damages based on the fraud count.

B. *Software Licensor. "Self Help"*

In *Art Stone Theatrical Corp. v. Technical Programming & Systems Support, Inc.*,³⁵⁶ Technical sold a computer system to Stone. After a dispute over the performance of the software component of the system, Technical removed the source code from the system without Stone's knowledge or authorization. The parties then entered into an agreement pursuant to which Technical returned the source code to Stone in exchange for a general release. Stone then sued Technical for breach of warranty and contract. Technical moved to dismiss the action on the ground that the action was barred by the release. Stone countered that the release was void because it executed the release under duress. The lower court re-

355. 911 F.2d 970, 15 U.S.P.Q.2d 1846 (4th Cir. 1990).

356. 157 A.D.2d 689, 549 N.Y.S.2d 789 (A.D. 2 Dept. 1990).

jected the duress contention, upheld the release and dismissed the action. The appeals court reversed, sending the case back to the lower court for a trial on the issue of duress.

The affidavit of the plaintiff's president in opposition to the motion to dismiss alleged that the wrongful removal of the source code from the computer software system resulted in the disruption of the plaintiff's business, thereby leaving him no choice but to accede to the defendant's demand and execute the general release in order to obtain the return of the source code. Inasmuch as "[a] contract may be voided on the ground of economic duress where the complaining party was compelled to agree to its terms by means of wrongful threat which precluded the exercise of its free will," the affidavit was sufficient to raise a factual issue with regard to the plaintiff's claim of duress. Accordingly, a trial on this issue is appropriate. [Citations omitted.]

C. *Computer Software Rental Amendments*

The Computer Software Rental Amendments Act of 1990 was signed into law by President Bush on December 1, 1990.³⁵⁷ The Amendments have three separate features which pertain to the rental of software, the use of coin-operated video games, and the recordation of shareware in the Copyright Office.

1. Rental Of Software

Under 17 U.S.C. section 106(3), a copyright owner has the exclusive right to "distribute copies . . . of the copyrighted work by sale or other transfer of ownership, or by rental, lease, or lending." But that right is limited by the first sale doctrine, codified in 17 U.S.C. section 109(a), which provides that "[n]otwithstanding . . . section 106(3), the owner of a particular copy . . . lawfully made . . . is entitled, without the authority of the copyright owner, to sell or otherwise dispose of the possession of that copy." Thus, a purchaser of a copyrighted computer program may distribute it to others without violating the copyright owner's copyright.³⁵⁸ Section 109(a), however, greatly concerned software copyright owners who believed that software rental houses were purchasing a copy of their software and then renting it out over and over again to hun-

357. The amendments were made under the Computer Software Rental Amendments Act of 1990, Pub. L. 101-650, 104 Stat. 5089 (December 1, 1990).

358. Note is made that "section 109 does not authorize adaptation and reproduction of a copyrighted work." *Midway Mfg. Co. v. Strohon*, 564 F. Supp. 741, 745, 219 U.S.P.Q. 42 (N.D.Ill. 1983) (quoted with approval in *Allen-Myland, Inc. v. Int'l Business Machines Corp.*, 746 F. Supp. 520, 538, 16 U.S.P.Q.2d 1817 (E.D. Pa. 1990)).

dreds of end users without the copyright owner sharing in any of the profits earned on the rentals. A further concern was that the end users desiring to use the software long after it was returned, would make unlawful copies of the software thereby denying the copyright owner of sales he would have otherwise made to such users.

In recognition of these legitimate concerns, 17 U.S.C. section 109(b) of the 1976 Copyright Act was amended.³⁵⁹ The amendments give the computer program copyright owner the right to prohibit the "rental, lease, or lending" (rental) of the computer program by others, specifically, anyone owning or in possession of a particular copy of the program, for purposes of direct or indirect commercial advantage.³⁶⁰ Rental of a program without the authority of the copyright now constitutes copyright infringement.³⁶¹ The amendments to section 109(b) took effect on the date that they were enacted into law—December 1, 1990.³⁶² However, the amendments are prospective and thus, have no impact on the rights of persons to rent a copy of a computer program acquired before the effective date of the amendments.³⁶³ Further, unless extended, the amendments will not apply to rentals made after October 1, 1997.³⁶⁴

There are three significant exceptions to the software rental prohibitions of amended section 109(b). First, rental "for nonprofit purposes by a nonprofit library or nonprofit educational institution" is exempted.³⁶⁵ Second, rental of "a computer program which is embodied in a machine or product and which cannot be copied during the ordinary operation or use of the machine or product" is also excluded.³⁶⁶ This exception was necessary to allow the rental of machines which employ computer-programmed controls, such as microwave ovens, automobiles, computers, and the like. Third, also exempted is rental of "a computer program embodied in or used in conjunction with a limited purpose computer that is designed for playing video games and which may be designed for other purposes."³⁶⁷ This exception was inserted at the behest of the Video

359. Pub. L. 101-650, 104 Stat. 5089, § 802.

360. 17 U.S.C. § 109(b)(1)(A) (as amended).

361. 17 U.S.C. § 109(b)(4) (as amended).

362. Pub. L. 101-650, 104 Stat. 5089, § 804(a).

363. Pub. L. 101-650, 104 Stat. 5089, § 804(b).

364. Pub. L. 101-650, 104 Stat. 5089, § 804(c).

365. 17 U.S.C. § 109(b)(1)(A) (as amended). The nonprofit library must, however, affix a warning of copyright to qualify for the exception. 17 U.S.C. § 109(b)(2)(A) (as amended).

366. 17 U.S.C. § 109(b)(1)(B)(i) (as amended).

367. 17 U.S.C. § 109(b)(1)(B)(ii) (as amended).

Software Dealer's Association which desired to continue its practice of renting home video game cartridges.

2. Use Of Coin-Operated Video Games

There is one other interesting amendment that was made to 17 U.S.C. section 109 which needs some further explanation. Under sub-sections (4) and (5) of 17 U.S.C. section 106, a copyright owner has the exclusive right to *publicly* perform and display a copyrighted audiovisual work.³⁶⁸ Prior to the amendment to section 109, persons purchased coin-operated video games and placed them in video arcades open to the general public. As the patrons played the game, its copyrighted audiovisual images were performed and displayed on a video screen. The courts held that the arcade owner was violating the copyright owner's exclusive rights to publicly perform and display the audiovisual work and, thus, was infringing the audiovisual copyright.³⁶⁹ It mattered not that the arcade owner lawfully purchased the video game. That lawful purchase would allow the arcade owner to *distribute* the video game since section 109(a)'s first sale doctrine provided an exception to the copyright owner's exclusive *distribution* rights under section 106(3). But, according to the courts, section 109(a) did not limit the copyright owner's exclusive *display and performance* rights under sections 106(4) and (5).

To make legal conduct of the type engaged by the arcade owner, a new subdivision (e) was added to section 109, providing that "[n]otwithstanding the provisions of sections 106(4) and 106(5), in the case of an electronic audiovisual game intended for use in coin-operated equipment, the owner of a particular copy of such a game lawfully made under this title, is entitled, without the authority of the copyright owner of the game, to publicly perform or display that game in coin-operated equipment . . .".³⁷⁰ This new

368. Recall that audiovisual works are defined as "works which 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." 17 U.S.C. § 101.

369. See, e.g., *Red Baron-Franklin Park, Inc. v. Taito Corp.*, 883 F.2d 275, 11 U.S.P.Q.2d 1548 (4th Cir. 1989). The 1976 Act provides that a work is publicly performed or displayed when done "at a place open to the public or at any place where a substantial number of persons outside of a normal circle of a family and its social acquaintances is gathered." 17 U.S.C. § 101. Hence, purchasing a video game cassette and playing with it at home within a small circle of family and friends would not violate the performance or display rights of the copyright owner.

370. The new subdivision goes on to recite an exception, to wit: "except that this subsec-

subdivision (e) takes effect on December 1, 1991, one year after the amendments were enacted into law³⁷¹ and, unless extended, will not apply to public performances or displays occurring after October 1, 1995.³⁷²

3. Shareware Recordation

Finally, the Register of Copyrights was authorized to record and provide a certificate of recordation with respect to shareware, and to compile, periodically publish, and offer for sale, information with respect to such recordation.³⁷³

D. *Shrink Wrap Licenses*

In *Vault Corp. v. Quaid Software, Ltd.*,³⁷⁴ copyrighted software was mass marketed on diskettes together with a shrink wrap, or bubble pack, license in accordance with the Louisiana Software License Enforcement Act (SLEA). The SLEA authorized use of a shrink-wrap license agreement which (1) provides that the producer/licensor retains title to the software, (2) prohibits copying, modifying, adapting, translating, reverse engineering, decompiling, disassembling, and creating derivative works, (3) prohibits further transfer, assignment, rental, sale or other disposition of the software, and (4) provides for automatic termination without notice of the license agreement if any of its provisions are breached. The court held that the license agreement was an unenforceable contract of adhesion and that the contract could not be saved by a Louisiana statute authorizing such agreements since the statute was preempted by the federal copyright laws.³⁷⁵ Based on the absence of subsequent shrink wrap cases, it is suspected that the software pub-

tion shall not apply to any work of authorship embodied in the audiovisual game if the copyright owner of the electronic audiovisual game is not also the copyright owner of the work of authorship."

371. Pub. L. 101-650, 104 Stat. 5089, § 804(a).

372. Pub. L. 101-650, 104 Stat. 5089, § 804(c).

373. Pub. L. 101-650, 104 Stat. 5089, § 805 (December 1, 1990).

374. 847 F.2d 255, 7 U.S.P.Q.2d 1281 (5th Cir. 1988).

375. In actuality, the lower court made this ruling. *Vault Corp. v. Quaid Software, Ltd.*, 655 F. Supp. 750 (E.D. La. 1987). On appeal, the plaintiff only sought an injunction to prevent defendant from *decompiling or disassembling* the computer program. Thus, as far as the preemption issue was concerned, the appeals court only had to decide that the provision in the Louisiana statute about decompilation and disassemble was preempted. Technically, the appeals court did not have to decide whether the other provisions, like the one about adaptation, would be preempted. See also, *Foresight Resources Corp. v. Pfortmiller*, 719 F. Supp. 1006, 1011, 13 U.S.P.Q.2d 1721 (D. Kan. 1989) (court cited *Vault* as "some reason to question the enforceability of any such [shrink wrap license] agreement.").

lishers have chosen not to attempt to enforce such agreements, believing that a decision like that in *Vault* is probable.

E. Recording Security Interests In Copyrighted Works

17 U.S.C. section 205(a) provides that "[a]ny transfer of copyright ownership or other document pertaining to a copyright may be recorded in the Copyright Office . . .". If certain conditions are met, section 205(c) provides that such recordation gives "all persons constructive notice of the facts stated in the recorded document." The recording is indexed by the title and registration number of the work. Thus, a creditor acquiring a security interest in a copyrighted film could record the security agreement with the Copyright Office and a prospective purchaser of the copyright need only search the indices maintained by the Copyright Office for that work to determine whether the copyright is encumbered. A drawback of this system is that when the creditor acquires a security interest in many copyrighted works such as a film library which adds new films over time, the creditor must make a separate filing for each film and the prospective purchaser must separately search the indices for each film. This is costly and time consuming.

On the other hand, the Uniform Commercial Code (UCC), adopted with or without modification in virtually all states, provides for recordation of security agreements through the filing of UCC-1 financing statements which are indexed by the debtor's name so that a single filing can be used for the whole film library. Furthermore, a UCC-1 filing can provide a continuing, floating lien on assets of a particular type owned by the debtor without the need for periodic updates (UCC section 9204). Thus, the creditor need only make one filing, and the prospective purchaser need only search the indices for the debtor's name.

In view of the foregoing, it seems reasonable for a creditor to opt for the UCC filing procedure when acquiring a security interest in a library of film copyrights, a portfolio of computer program copyrights, or any other large stable of copyrighted works. But, as seen below, that practice would now be a mistake of enormous proportions in light of a recent case, *In re Peregrine Entertainment, Ltd.*³⁷⁶

1. National Peregrine

In *National Peregrine*, Cap Fed had extended a \$6 million line

376. 16 U.S.P.Q.2d 1017 (C.D. Cal. 1990).

of credit to the predecessor of NPI secured by the predecessor's film library consisting of copyrights and distribution rights and licenses with respect to approximately 145 films, and accounts receivable from the licensing thereof. Cap Fed filed UCC-1 financing statements in order to perfect its security interest. NPI then became a Chapter 11 bankruptcy debtor-in-possession whose principal assets were the film library and the accounts receivable. NPI contended that Cap Fed's security interest was unperfected because Cap Fed failed to record the security interest in the United States Copyright Office as provided for in 17 U.S.C. section 205(a) and that NPI had a judicial lien on the film library and receivables and thus could recover the assets for the benefit of the estate.

The district court agreed with NPI.³⁷⁷ The court began by holding that an agreement granting a creditor a security interest in a copyright or in income derived from commercial exploitation of a copyright is a "document pertaining to a copyright [which] may be recorded in the Copyright Office" under section 205(a). Therefore, Cap Fed *could have* recorded the security agreement in the Copyright Office. The court next determined that recordation in the Copyright Office under the Copyright Act was the *exclusive* recordation method *preempting* "any state recordation system pertaining to interests in copyrights" including recordation pursuant to the UCC as was done by Cap Fed. According to the court, "the comprehensive scope of the federal Copyright Act's recording provisions, along with the unique federal interests they implicate, support the view that federal law preempts state methods of perfecting security interests in copyrights and related accounts receivable."

Having concluded that Cap Fed should have, but did not, record its security interest with the Copyright Office, the court went on to hold that NPI could subordinate Cap Fed's interest and recover it for the benefit of the bankruptcy estate.³⁷⁸

377. The court said that its decision would be the same whether the works were themselves created under the present Copyright Act or its predecessor because transfers of copyrights created under the predecessor Act are governed by the current Act's recording provisions as long as the transfer was after the effective date of the 1976 Act.

378. The court also construed the UCC provisions themselves as requiring the use of the Copyright Office recordation procedure for perfecting a security interest in a copyright to the exclusion of the UCC procedure. In the context of copyrights, this holding is overshadowed by the ruling that the state procedures are preempted which would be the case even if the UCC provisions were amended to explicitly allow UCC-1 filings *in lieu* of Copyright Office filings. But this ruling may have major impact in other areas, particularly, security interests in patents.

In reaching its conclusion, the court rejected the holdings in two patent cases "insofar as they are germane to the issues presented here." Both cases held that, under the UCC, security interests in patents need not be recorded in the U.S. Patent and Trademark Office (PTO)

Based on this decision, it is clear that one who is granted a security interest in or pertaining to a copyright or revenue generated therefrom should record the security agreement in the Copyright Office pursuant to section 205. Remember that for a recordation to be effective as against third parties, section 205(c)(2) requires that the copyrighted work be registered in the Copyright Office pursuant to sections 408 *et seq.* Therefore, be certain that the work is registered or will be registered as part of the transaction creating the security interest. But, one should not automatically ignore the UCC recordation provisions. The Copyright Office procedure is best used in addition to, and not in lieu of, the UCC process. Other courts in and out of California may find the court's reasoning in *National Peregrine, Inc.* flawed and its decision incorrect. Should that be so, compliance with state law may be a prerequisite to creation and enforcement of rights against the debtor. Even if the case stands the test of time, the Copyright Act's recordation and priority scheme is not nearly as comprehensive as that of the UCC. Where the former is silent as to a creditor's rights and remedies, the court resolving the issues may, and indeed should, turn to the UCC and state law in filling in the gaps. That would be wholly consistent with the statement in *National Peregrine, Inc.* that, in the case of patents, recordation pursuant to the patent statute may be necessary to perfect a creditor's security interest, but the priority scheme established by the UCC may govern because the patent statute is silent on that issue.

F. *Right To Jury Trial In A Copyright Infringement Action*

A right to a jury trial exists in a copyright infringement suit on the issues of infringement and willfulness when monetary damages of any kind are sought, even if the only damages sought are statutory damages.³⁷⁹

to be perfected as against lien creditors because section 261 of the federal patent statute (35 U.S.C. §§ 1 *et seq.*) governing patent assignments does not specifically mention liens or lien creditors. According to the *National Peregrine, Inc.* court, however, these cases misconstrue the plain language of certain UCC provisions, which require that when a federal statute provides for a national system of recordation or specifies a place of filing different from that in the UCC, compliance with the national system supplants and is deemed equivalent to the filing of a UCC-1 financing statement (UCC §§ 9104(a), 9302(4)). It may be that the priority scheme established by the UCC (§ 9301) governs the conflicting rights of creditors (since the patent statute is silent as to a priority scheme), but determination of whether a creditor's interest is perfected depends on the creditor's recordation of its interest in accordance with the federal statute (UCC § 9302(4)).

379. *Video Views, Inc. v. Studio 21, Ltd.*, 925 F.2d 1010, 1013-17, 17 U.S.P.Q.2d 1753 (7th Cir. 1991).

VIII. CONCLUSION

The copyright laws as they apply to computer programs are in a constant state of flux. Only a sampling of the changes in the law over the last few years have been discussed in this article. There are many, many others. That translates into an extremely exciting time for those practicing software copyright law and, at the same time, a terribly unsettling time for those actively engaged in the development and marketing of software.

A software firm that believed ownership of its flagship program to be beyond challenge might find that a former software consultant has a legitimate claim of joint ownership in the program. The company might instead learn that its copyright in the program is invalid and that the program is free for all to copy because its predecessor intentionally omitted certain material information from the application to register such copyright. The copyright may be unenforceable due to a licensing program adopted ten years ago, but which now constitutes copyright misuse. The rigorous clean room procedure used in developing the program may no longer be adequate to shield the program from a claim of infringement thereby exposing the company to millions of dollars in liability and an injunction prohibiting further marketing of the program. The program may have borrowed elements from an industry standard program at a time when the conventional wisdom was that those elements were unprotectible ideas, but recent cases rule that the elements are now copyrightable expression. The company may have placed great reliance on the protection afforded by its shrink wrap license agreements only to later learn that such agreements are unenforceable.

The lesson to be learned from the above is clear. Everyone in the software industry must be diligent in monitoring changes in the copyright laws. With each change, policies and practices must be reevaluated, and the strength and weaknesses of copyright positions, both offensive and defensive, reassessed. Only then can one maximize the value of one's own copyrights, while minimizing the risk that one's products will run afoul of the copyrights of others.

