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Copyright Protection for Computer Programs Under the 1976 Copyright Act

On October 19, 1976 Public Law 94-553, the first complete revision of the United States copyright law in over sixty-five years, was signed into law.¹ This new law, effective in greatest part from January 1, 1978,² makes fundamental changes in copyright protection by changing the basic duration of such protection while eliminating renewals,³ and creating a Copyright Royalty Tribunal to oversee certain new compulsory licensing provisions.⁴ Additional provisions have made clarifications, if not changes. For example, the judicially developed doctrine of fair use has been made a part of the statute law,⁵ and provisions have been enacted to take account of the effects of the vast technological changes of the past half-century on copyright matters.⁶ The extent of library liability for the widespread use of

¹General Revision of Copyright Law, Pub. L. No. 94-553, 90 Stat. 2541 (1976) [hereinafter cited as 1976 Act].

²*Id.* sec. 102, at 2598-99. Sections 118 (requiring compulsory licensing for certain nonprofit use of dramatic, musical or pictorial works), 304 (b) (extending the term of copyright protection for works in their renewal term) and ch. 8 (establishing a Copyright Royalty Tribunal to determine rates for certain compulsory licenses) of 17 U.S.C. as amended by the 1976 Act became effective upon approval of the Act. The remaining sections are effective from January 1, 1978.

³1976 Act, *supra* note 1, sec. 101, at 2572-76 (to be codified as 17 U.S.C. ch. 3 effective Jan. 1, 1978). Under the 1976 Act copyright will endure for the lifetime of the author plus fifty years. *Id.* at 2572. Under the old law, copyright protection lasted for twenty-eight years from first publication and could be renewed for an additional twenty-eight years. 17 U.S.C. § 24 (1970 & Supp. V 1975).

⁴1976 Act, *supra* note 1, sec. 101, at 2594-98 (to be codified as 17 U.S.C. ch. 8).

⁵*Id.* at 2546 (to be codified as 17 U.S.C. § 107 effective Jan. 1, 1978).

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.

Id.

⁶See H.R. REP. NO. 94-1476, 94th Cong., 2d Sess., reprinted in [1976] U.S. CODE CONG. & AD. NEWS 6089.

The history of copyright law has been one of gradual expansion in the types of works accorded protection . . . [T]echnological developments have made possible new forms of creative expression that never existed before. In some of these cases the new expressive forms—electronic music, filmstrips, and computer programs, for example—could be regarded as an extension of copyrightable subject matter Congress had already intended to protect, and were thus considered copyrightable from the outset without the need of new legislation. In other cases, such as photographs, sound recordings, and motion pictures, statutory enactment was deemed necessary to give them full recognition as copyrightable works.

Id. at 51, [1976] U.S. CODE CONG. & AD. NEWS 6094.

photocopy devices is clarified,⁷ and the particular problems of television and the cable television systems are addressed.⁸ Another area affected by the new law, although probably not changed, is that of copyright protection for computer programs.

Under the prior law there was some question whether a computer program was the proper subject matter for copyright protection. While the general opinion of the commentators⁹ as well as legislative committees¹⁰ and executive commissions¹¹ was that they were, some doubt remained.¹² In resolving this problem the 1976 Act does not single out computer programs as a separate category of work subject to copyright protection, but the definition of the category "literary work" is clearly broad enough to include them. The act defines literary works entitled to copyright protection 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."¹³

⁷1976 Act, *supra* note 1, sec. 101, at 2546 (to be codified as 17 U.S.C. § 108 effective Jan. 1, 1978).

⁸*Id.* at 2542, 2548-58 (to be codified as 17 U.S.C. §§ 101, 110, 111 effective Jan. 1, 1978).

⁹See Banzhof, *Copyright Protection for Computer Programs*, in ASCAP COPYRIGHT L. SYMP. NO. 14, at 118 (1966); Iskrant, *The Impact of the Multiple Forms of Computer Programs on their Adequate Protection by Copyright*, in ASCAP COPYRIGHT L. SYMP. NO. 18, at 92 (1970); Nimmer, *New Technology and the Law of Copyright: Reprography and Computers*, 15 U.C.L.A. L. REV. 931 (1968); Prasinis, *Worldwide Protection of Computer Programs by Copyright*, 4 RUTGERS J. COMPUTERS & L. 42 (1974); Note, *Copyright Protection for Computer Programs*, 64 COLUM. L. REV. 1274 (1964); Note, *Adequate Protection for Computer Programs*, 1968 UTAH L. REV. 369.

¹⁰See, e.g., S. REP. NO. 94-473, 94th Cong., 1st Sess. 50 (1975); note 6 *supra*.

¹¹See, e.g., "To Promote the Progress of . . . Useful Arts", REPORT OF THE PRESIDENT'S COMMISSION ON THE PATENT SYSTEM 13 (1966).

¹²See Puckett, *The Limits of Copyright and Patent Protection for Computer Programs*, in ASCAP COPYRIGHT L. SYMP. NO. 16, at 81 (1968); Scafetta, *Computer Software Protection: The Copyright Revision Bills and Alternatives*, 8 JOHN MARSHALL J. PRAC. & PROC. 381 (1975); Note, *Computer Software: Beyond the Limits of Existing Proprietary Protection Policy*, 40 BROOKLYN L. REV. 116 (1973); Comment, *Computer Program Protection: The Need to Legislate a Solution*, 54 CORNELL L. REV. 586 (1969).

¹³1976 Act, *supra* note 1, sec. 101, at 2545 (to be codified as 17 U.S.C. § 102 (a)(1) effective Jan. 1, 1978). Scafetta, *supra* note 12, argues that computer programs could not be legitimately copyrighted under the 1909 law. He also discusses S. 22, 94th Cong., 1st Sess. (1975), the bill which became the 1976 Act. He maintains that programs are not covered by the act. He bases this contention upon incorrect readings of §§ 102(a) and 117 of revised 17 U.S.C. He contends that although programs designed for literary tasks may be covered, § 102(a) cannot be read to include programs generally as it does not mention them. *Id.* at 385. However, the language of this section is broad enough to include programs, and the House committee explicitly stated "[this definition] also includes computer data bases, and computer programs to the extent that they incorporate authorship . . ." H.R. REP. NO. 94-1476, 94th Cong., 2d Sess. 54, reprinted in [1976] U.S. CODE CONG. & AD. NEWS 6089, 6097. Scafetta further argues that § 117 means that the expanded definition of literary work cannot include computer programs. Scafetta, *Computer Software Protection: The Copyright Revision Bills and Alternations*, 8 JOHN MARSHALL J. PRAC. & PROC. 381, 386 (1975). But § 117 retains the old law only in connection with computer use. It does not affect the new definition of works entitled to copyright protection. As the committees state: "[W]ith respect to the

As the report of the House Committee on the Judiciary points out, this category "includes . . . computer programs to the extent that they incorporate authorship in the programmer's expression of original ideas as distinguished from the ideas themselves."¹⁴

Because the availability of copyright protection for computer programs is now clear, this note will examine in detail the nature and scope of the protection afforded under the 1976 Act, and will compare that protection with that afforded by the alternatives of patent and trade secret protection. As the act does not explicitly address itself to the particular problems of the programming industry, the scope of its protection must be found in the general statutory language and in relevant case law. While no case has yet determined the scope of copyright protection afforded computer programs, this note will show that the protection needs of the computer programmer are analagous to those of the authors of other literary works, such as form books and architectural plans, which also are written for use. The cases dealing with such works will be examined to determine the scope of protection afforded programs under the new law.

PROGRAMS

Programs are sets of instructions which set up a computer to perform specified functions. They can be as varied as physical interconnections within the machines¹⁵ or literal descriptions of the steps to be followed in performing a particular function.

To set up a computer for a specific purpose the following steps typically are followed: (a) the desired result is specified in general terms; (b) the method of achieving the result is specified in a description of the steps to be followed by the machine. This product is usually called an algorithm. It may be literal or it may take the form of a "flow chart", a pictorial representation of the procedure; (c) the algorithm is written out in a standard form using a human oriented programming language such as FORTRAN (FORMula TRANslation) or COBOL (COMmon Business Oriented Lanugage). This product is called a source program; (d) the source program is converted into a numerical machine language which can interact directly with the machine. This product is called an object

copyright-ability of computer programs . . . the new statute would apply." H.R. REP. No. 94-1476, 94th Cong., 2d Sess. 116, *reprinted in* [1976] U.S. CODE CONG. & AD. NEWS 6089, 6159; S. REP. No. 94-473, 94th Cong., 1st Sess. 99 (1975). The actual reach of § 117 is discussed further at note 54 *infra* & text accompanying.

¹⁴H.R. REP. No. 94-1476, 94th Cong., 2d Sess. 54, *reprinted in* [1976] U.S. CODE CONG. & AD. NEWS 6089, 6097. For a discussion of the distinction between an idea and the expression of that idea, see text accompanying notes 86-90 *infra*.

¹⁵While cards or tapes may be seen as part of the machine when they are running through it, "physical interconnections" encompasses such devices as circuit boards which are arranged in a particular manner, the arrangement being the program, and then plugged into the machine.

program; and (e) following step (c) or step (d) the program is put into machine readable form such as magnetic or punched cards or tapes and converted to electrical or magnetic signals stored within the computer.¹⁶

While the product of any of these steps except the first can be called a program, source programs and object programs are the products most widely marketed. It is for these types of programs that copyright protection is most needed, and it is to these specific types of programs that this note is addressed.

ALTERNATIVES TO COPYRIGHT PROTECTION

The law provides several methods for the protection of the fruits of intellectual labor. Principal among these are common law protection of trade secrets¹⁷ and the constitutional provision for patent and copyright protection.¹⁸ Each method affords particular protection when its peculiar requirements are met.

Trade secret protection is a creation of common law.¹⁹ The trade secret proprietor is generally protected against the disclosure or unauthorized use of the secret by those to whom it has been confided under a restriction of nondisclosure or nonuse.²⁰ The protection extends even to inventions which could have been patented,²¹ but is limited to material which can be kept secret and which is not of general knowledge.²²

¹⁶As a simple example consider a program to add a set of numbers. The first step would be to specify the desired result: obtain the sum of a series of numbers. The second step would be to construct an algorithm, for example, take the first number, store it, take the second number, add it to the first, store the sum, etc. This algorithm would then be put into a standard form, in this example in FORTRAN. Some of the steps would be: $X = Y(1)$, which stores a number called $Y(1)$ in a location labeled X ; $X = X + Y(2)$, which adds a second number, $Y(2)$, to the contents of location X and replaces the contents of that location with the sum; $X = X + Y(3)$; etc. These standard form instructions would then be translated expression for expression into a machine language which can be represented by a series of binary numbers, for example, 10110101, 01001010, 00010101, etc. These numbers, when fed into the computer, set it up to carry out the steps specified in the programs.

Programs which allow the machine itself to perform the usually difficult task of translation to machine language have been written for almost every computer. This note will deal generally with programs created solely by the human programmer. The unique problems of machine translated programs will be discussed as a special case of the legal category of derivative works. See text accompanying note 81 *infra*.

¹⁷See generally RESTATEMENT OF TORTS § 757 (1939).

¹⁸U.S. CONST. art. I, § 8, cl. 8.

¹⁹The common law doctrine of trade secret protection, see RESTATEMENT OF TORTS § 757 (1939), has been enacted as statutory law in many jurisdictions. See, e.g., CAL. PENAL CODE § 499b (West 1970); IND. CODE §§ 35-17-3-1 to 5 (1971) (Trade Secret Theft Act of 1969) (repealed effective July 1, 1977); OHIO REV. CODE ANN. § 1333.51 (Page 1975 Supp.). While the new revision of the Indiana criminal law does not expressly include a section on trade secrets, its theft provision seems broad enough to protect them. See IND. CODE § 35-43-4-3(1) (1976 Supp.).

²⁰Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470, 475 (1974) (construing Ohio law); University Computing Co. v. Lykes-Youngstown Corp., 504 F.2d 518, 534 (5th Cir. 1974); RESTATEMENT OF TORTS § 757 (1939).

²¹Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470, 491-92 (1974).

²²*Id.* at 475 (dictum). See also Sears, Roebuck & Co. v. Stiffel Co., 376 U.S. 225 (1964);

Under the 1909 copyright law²³ trade secret protection remained available for works of expression which were not the proper subject of statutory copyright.²⁴ Unpublished "writings" were not protected under the 1909 law.²⁵ Thus, for these works trade secret protection remained available. Under the 1976 Act unpublished material does come under statutory protection,²⁶ and the protection of such rights as the distribution of copies by sale or rental is made the exclusive province of the federal statute.²⁷ However, breach of trust actions are expressly exempted from statutory preemption.²⁸ So long as the trade secret doctrine is used as a form of contractual protection outside of the scope of the copyright law it will not be preempted by the federal law.²⁹

If the material is in fact kept secret a computer program can still be protected as a trade secret. By foregoing publication, the holder of the trade secret gains the right to prescribe conditions on both disclosure and use. The holder of a copyright on the other hand has no control over the use of his work but gains the right to wide distribution without loss of protection and gains federal statutory remedies against infringers.³⁰ Trade secret protection is most appropriate for programs which can profitably be disclosed in confidence to a few large-volume users. An example might be a program to process bank charge accounts.

Compco Corp. v. Day-Brite Lighting, Inc., 376 U.S. 234 (1964) (state unfair competition protection not available as substitute for invalid federal design patents).

²³17 U.S.C. (1970 & Supp. V 1975) (originally enacted as Pub. L. No. 349, ch. 320, 35 Stat. 1075 (1909) [hereinafter cited as 1909 Law]). This title of U.S.C. is revised in its entirety by the 1976 Act. See notes 1 & 2 *supra* & text accompanying.

²⁴*Goldstein v. California*, 412 U.S. 546 (1972) (California law protecting against unauthorized copying of sounds embodied in phonograph records or tapes held valid against claim of "record pirates" that federal copyright law preempted such state protection).

²⁵17 U.S.C. § 10 (1970); *Atlantic Monthly Co. v. Post Publishing Co.*, 27 F.2d 556 (D. Mass. 1928). The court in *Atlantic Monthly* further stated that the unrestricted sale of a single copy constitutes "publication" for the purpose of investing statutory copyright. The court held that copyright had been voluntarily divested before the action was brought, and it could not award the injunction requested. Hence the court's comments on publication constitute dicta.

²⁶1976 Act, *supra* note 1, sec. 101, at 2545 (to be codified as 17 U.S.C. §§ 104(a) effective Jan. 1, 1978).

²⁷*Id.* at 2572 (to be codified as 17 U.S.C. § 301 effective Jan. 1, 1978).

²⁸*Id.* (to be codified as 17 U.S.C. § 301(b)(3) effective Jan. 1, 1978).

²⁹H.R. REP. NO. 94-1476, 94th Cong., 2d Sess. 132, reprinted in [1976] U.S. CODE CONG. & AD. NEWS 6089, 6177-78. See also S. REP. NO. 94-473, 94th Cong., 1st Sess. 115 (1975) (discussing different language in the earlier Senate version of the bill). Under the 1976 Act a program will receive statutory protection as soon as it is written. If notice of copyright is not properly affixed and copies are sold without restriction all protection will be lost. If copies are not distributed publicly but are kept for in-house use no remedy will be available under the 1976 Act if an employee disclosed the program to a competitor. However, since disclosure of trade secrets is distinct from the protection offered by the act, a state action can be brought against the divulging employee. Similarly, if the program is disclosed in confidence to a third party for his use, the fact that the program is under statutory copyright as soon as it is written does not preclude an action against such a third party if he divulges the program.

³⁰See 17 U.S.C. §§ 101-116 (1970 & Supp. V 1975).

Patent protection would be available for a program which constitutes an invention.³¹ If such a program rises to the level of novelty and nonobviousness required for patent protection,³² the ideas contained in the program will be protected against unauthorized use—even if such use is the result of independent discovery.³³ This broad protection has led to attempts to patent novel programs of a fundamental nature.³⁴ Neither congressional nor executive committees have looked with favor on the idea of patent protection for computer programs.³⁵ The two cases which have reached the Supreme Court have held that the particular programs before the Court could not be patented.³⁶ The indications are that few if any programs would be significantly beyond the current state of the art and thus the proper subject of patent protection.³⁷ With copyright protection now clearly available the courts may be even more reluctant to grant the greater protection which a patent would provide. Even if patent protection should prove to be available this should not bar the selection of copyright protection.³⁸

COPYRIGHT PROTECTION

Copyright protects the intellectual work product which constitutes expression as opposed to the idea which is being expressed.³⁹ Federal statutory copyright extends to certain writings of authors and grants to them certain rights in their creations.⁴⁰ These rights do not include the restrictions on disclosure or use of the trade secret doctrine or the protection against rediscovery which a patent provides. But in the context of computer programs, because the trade secret requirement of confidentiality

³¹See 35 U.S.C. §§ 100-103 (1970 & Supp. V 1975). An invention can take the form of a machine or process. 35 U.S.C. § 103 (1970). These categories are potentially appropriate to computer programs. A process is a "mode of treatment of certain materials to produce a given result. It is an act, or series of acts, performed upon the subject matter to be transformed and reduced to a different state or thing." *Cochrane v. Deener*, 94 U.S. 780, 788 (1876).

³²See *Dann v. Johnston*, 425 U.S. 219 (1976); *Gottschalk v. Benson*, 409 U.S. 63 (1972). Novelty is not defined in the patent law. However, conditions which evidence lack of novelty include general knowledge or use of the invention, previous patent or disclosure and previous invention by another. 35 U.S.C. § 102 (Supp. V 1975). Obviousness is judged by the standard of a person having ordinary skill in the relevant art. 35 U.S.C. § 103 (1970).

³³35 U.S.C. §§ 102, 271 (1970 & Supp. V 1975).

³⁴See, e.g., *Dann v. Johnston*, 425 U.S. 219 (1976); *Gottschalk v. Benson*, 409 U.S. 63 (1972).

³⁵See, e.g., "To Promote the Progress of . . . Useful Arts," REPORT OF THE PRESIDENT'S COMMISSION ON THE PATENT SYSTEM (1966).

³⁶*Dann v. Johnston*, 425 U.S. 219 (1976) (nonobviousness not established); *Gottschalk v. Benson*, 409 U.S. 63 (1972) (not a process within the meaning of the statute).

³⁷See, e.g., Comment, *Computer Program Protection: The Need to Legislate a Solution*, 54 CORNELL L. REV. 586, 603 (1969).

³⁸*Mazer v. Stein*, 347 U.S. 201 (1954).

³⁹*Kalem Co. v. Harper Bros.*, 222 U.S. 55 (1911); *Holmes v. Hurst*, 174 U.S. 82, 86 (1899) (dictum).

⁴⁰17 U.S.C. §§ 1, 4, 8, 10 (1970 & Supp. V 1975).

may be inconvenient and the patent requirement of novelty impossible to meet, copyright will in many cases be the only practical protection available. An examination of the 1976 Act and court decisions in the copyright field will determine the extent of that protection.

Copies

The basic concept of the right of the proprietor of a copyright to restrict reproduction of his work is inherent in the word copyright itself. This concept has been part of Anglo-American copyright law since the Statute of Anne.⁴¹ Yet it has not been at all clear under American law, as embodied in the 1909 law and interpreted by the courts, that this doctrine would be of much use to the proprietor of a computer program.⁴² Programs are bought to be used, and if a useable version could be created which was not legally a "copy," the value of the copyright in the underlying program would be minimal.

While under the 1909 law the copyright proprietor had the exclusive right "to print, reprint, publish, copy, and vend the copyrighted work,"⁴³ the legal meaning of these terms was established by judicial decisions. The concept of a "copy" has been influenced greatly by the 1908 case of *White-Smith Music Publishing Co. v. Apollo Co.*⁴⁴ White-Smith, a publisher of sheet music, brought an infringement action against Apollo Co., the manufacturer of perforated music rolls for use in player pianos, which reproduced White-Smith's copyrighted sheet music. The Supreme Court limited the definition of "a copy of a musical composition to be 'a written or printed record of it in intelligible notation'."⁴⁵ The Court considered the particular commercial impact of a holding of infringement on the music publishing industry⁴⁶ and the persuasive effect of unanimity in the lower

⁴¹8 Anne, ch. 19 (1710).

WHEREAS printers, booksellers, and other persons have of late frequently taken the liberty of printing . . . books and other writings, without the consent of the authors . . . to their very great detriment, and too often to the ruin of them and their families . . . may it please your Majesty . . . That from and after the tenth day of April, one thousand seven hundred and ten, the author of any book or books already printed . . . shall have the sole right and liberty of printing such books and books for the term of one and twenty years

⁴²It is an interesting coincidence that in more than 250 years, British and American copyright laws have moved separately from the Statute of Anne to remarkably similar positions with respect to copyright protection for computer programs. The British, like the Americans, are in the midst of a major revision of their copyright statutes. Under the present British law, as under the old American, copyright protection is probably available for computer programs, but as no cases have been brought the situation is uncertain. The proposed revision of the British statute will clear up their uncertain situation. See *The Economist* (London), 12-18 March 1977, at 111, col. 1.

⁴³17 U.S.C. § 1(a) (1970).

⁴⁴209 U.S. 1 (1908).

⁴⁵*Id.* at 17.

⁴⁶*Id.* at 9. There was real concern that the sheet music industry might monopolize the mechanical music field. Apparently some eighty publishing firms had entered into contracts with a single mechanical music organization to allow the latter the exclusive use of their

courts and held that there had been no infringement. In a concurring opinion, Mr. Justice Holmes stated that "on principle anything that mechanically reproduces that collocation of sounds [which is the essence of the work under copyright] ought to be held a copy."⁴⁷ But he felt that the proposition that a copy had to be perceptible by humans had been too well established for judicial change.⁴⁸

If the courts had restricted *White-Smith* to its narrow holding that a device designed to mechanically reproduce the sounds represented by copyrighted sheet music did not infringe the copyright in the underlying sheet music, the case would have had little impact, for the 1909 revision of the copyright law specifically granted to the copyright proprietor the right to restrict such use.⁴⁹ However, in spite of the language in *White-Smith* about the particular nature of the music industry and about the holdings of the lower courts in music cases, the courts have read *White-Smith* to stand for the broad proposition that something which cannot be visually perceived as a copy of an underlying work is not a copy.⁵⁰ This definition also has been used to define the kind of "copy" necessary for publication and registration.⁵¹

The potential problem for computer programmers is obvious. While distinctions may be made between the relationship of punched cards or magnetic tapes to the underlying program and the relationship of a piano roll to the underlying musical composition, such distinctions have seemed artificial in light of the broad reading given by the courts to *White-Smith*. If punched cards or magnetic tapes cannot be "copies," then they may be freely manufactured and distributed, and any copyright in the underlying program would be worth little. Fortunately, Congress found the distinctions derived by the courts from *White-Smith* to be largely unjustifiable,⁵² and the language of the 1976 Act makes clear that the right to make copies

music. *White-Smith* was a test case brought as a part of these contracts. H.R. REP. NO. 2222, 60th Cong., 2d Sess. (1909), reprinted in H. HOWELL, THE COPYRIGHT ACT 194, 200-201 (1941). Congress reacted by allowing composers to control the mechanical use of their works but added a compulsory licensing provision to prevent the sheet music publishers from monopolizing the recording industry. 17 U.S.C. § 1(e) (1970) (originally enacted as Pub. L. No. 349, ch. 320, § 1(e), 35 Stat. 1075 (1909)).

⁴⁷*White-Smith Music Publishing Co. v. Apollo Co.*, 209 U.S. 1, 20 (1908).

⁴⁸*Id.* at 18, 19.

⁴⁹Pub. L. No. 349, ch. 320, § 1(e), 35 Stat. 1075 (1909) (current version at 17 U.S.C. §§ 1(e), 101(e) (1970 & Supp. V 1975)).

⁵⁰*See, e.g., Corcoran v. Montgomery Ward & Co.*, 121 F.2d 572 (9th Cir. 1941).

⁵¹*See Rosette v. Rainbo Record Mfg. Corp.*, 354 F. Supp. 1183 (S.D.N.Y. 1973) (recordings of nursery songs were not "copies" of the underlying works and their sale held not to constitute publication which would divest common law copyright); 37 C.F.R. § 202.8 (b) (1976) (regulations for copy acceptable for registration generally require forms which can be perceived visually).

⁵²H.R. REP. NO. 94-1476, 94th Cong., 2d Sess. 52, reprinted in [1976] U.S. CODE CONG. & AD. NEWS 6089, 6095; S. REP. NO. 94-473, 94th Cong., 1st Sess. 51 (1975).

of a work by fixing it in any material object from which the work can be perceived either directly or with the aid of a machine of any kind is exclusively the author's.⁵³ Thus, the exclusive right of the proprietor of a copyright in a computer program to copy and vend his program in such useable forms as punched cards and magnetic tapes is clearly secured by the 1976 Act. This important protection, previously uncertain, is alone enough to guarantee the wide use of copyright protection for computer programs.

The further problem of whether a program contained completely within the electronics of a computer is a "copy" is not decided by the 1976 Act.⁵⁴ The scope of exclusive rights to the use of copyright material in connection with computers and other similar information systems will remain what it is under the 1909 law or state or common law. If the temporary storage of a work in a computer does not now constitute the making of a copy it will not be copying under the 1976 Act. The temporary storage of a writing in the form of electrical or magnetic codes almost certainly would not be a "copy" under the broad reading of *White-Smith*, and the new provisions which override that case specifically do not apply to this situation. This problem is perhaps more apparent than real. To put any writing into a computer is impractical without first making a version in a form easily read by the machine—often a copy on magnetic tape. Such a version would itself be a copy under the 1976 Act, and the rights of the copyright proprietor to control such copying would seem to offer ample protection.

Use

Computer programs present an unusual, though not unique, copyright question. To what extent does the fact that copyright protects expression but will not create a monopoly over ideas limit the scope of copyright protection in a writing which is designed primarily to be used rather than read? Two areas in which this issue has been before the courts are those of business forms and architectural plans. An examination of the cases in these areas will help to indicate the scope of the protection that a copyrighted computer program will receive. The leading case in the business forms area is *Baker v. Seldon*.⁵⁵ Seldon obtained a copyright on a book which described a new bookkeeping system. The book contained blank forms for use in implementing the system. These forms consisted of headings and ruled lines on otherwise blank sheets. Baker published books of forms which accomplished the same thing as those in Seldon's

⁵³1976 Act, *supra* note 1, sec. 101, at 2541, 2546 (to be codified as 17 U.S.C. §§ 101, 106 effective Jan. 1, 1978).

⁵⁴*Id.* at 2565 (to be codified as 17 U.S.C. § 117 effective Jan. 1, 1978). See also H.R. REP. No. 94-1476, 94th Cong., 2d Sess. 116, reprinted in [1976] U.S. CODE CONG. & AD. NEWS 6089, 6161; S. REP. No. 94-473, 94th Cong., 1st Sess. 99 (1975).

⁵⁵101 U.S. 99 (1879).

copyrighted book, although Baker's arrangement of columns was different. The court stated that "[t]he description of the art in a book, although entitled to the benefit of copyright, lays no foundation to an exclusive claim to the art itself." And, while Seldon may copyright his book, "that only secures to him the exclusive right of printing and publishing his book." They further remarked that "blank account books are not the subject of copyright; and . . . the mere copyright of Seldon's book did not confer upon him the exclusive right to make and use account-books, ruled and arranged as designated by him and described and illustrated in said book."⁵⁶ Thus *Baker v. Seldon* stands for the proposition that a form designed for use which embodies an idea but not the copyrightable expression of that idea cannot be protected by copyright.

If, on the other hand, the form inseparably includes the copyrightable expression of the author it will be protected. Thus, when Hulbert Beardsley obtained a copyright on a pamphlet which explained a securities replacement bond his copyright included protection of the forms which necessarily included the protected expression.⁵⁷ The forms included such items as a bond, affidavit of loss and an indemnity agreement. All embodied the expression of Beardsley's plan as well as the mere idea of the plan. The court held that such forms were entitled to copyright protection.⁵⁸

Even if the forms contain the protected expression of the author and are thus protected themselves, copies may be made for personal use. The defendant in *American Institute of Architects v. Fenichel*⁵⁹ made and used six copies of a form contained in the Institute's copyrighted book of "Standard Documents." The court found the use protected under the "fair use doctrine,"⁶⁰ and alternatively found that the defendant's use was not the kind of use intended to be forbidden by the statute. The court stated that "when the plaintiff put on the general market a book of forms, he implied the right to their private use."⁶¹

The teaching of the form book cases is that while a form which does no more than provide a tool for the use of a system or idea is not subject to copyright protection,⁶² a form which inseparably contains the expression of

⁵⁶*Id.* at 107.

⁵⁷*Continental Casualty Co. v. Beardsley*, 253 F.2d 702 (2d Cir.), *cert. denied*, 358 U.S. 816 (1958).

⁵⁸*Id.* at 708. As to most of the forms in controversy, the court upheld the lower court's finding that copyright had been lost through publication without compliance with statutory requirements. Thus, much of the court's discussion is dictum. However, as to other forms where such a finding had not been made, the court's decision as to copyrightability rises to the level of holding.

⁵⁹41 F. Supp. 146 (S.D.N.Y. 1941).

⁶⁰For a description of the fair use doctrine, see note 5 *supra*.

⁶¹*American Inst. of Architects v. Fenichel*, 41 F. Supp. 146, 147 (S.D.N.Y. 1941).

⁶²A caveat is in order. If the form were complicated enough so that its appearance rose to the level of expression copyright protection would be available. However the ideas expressed

the system or idea can be protected. However, even the protected form may be copied for personal use.⁶³ Since the copyright proprietor loses all control over the work once sold,⁶⁴ this right of use should apply to anyone legally in possession of a copy of the book.

A line of architectural plans cases also builds upon the basic holding of *Baker v. Seldon* to protect expression but not ideas. Using a plan to build a structure, thereby implementing and, in a sense, expressing the idea represented by the plan, is not infringement.⁶⁵ Since the plan contains the protected expression however, it may not be freely copied.⁶⁶ The limits of this concept were laid out in *Imperial Homes Corp. v. Lamont*.⁶⁷ The court stated, "no copyrighted architectural plans . . . may clothe their author with the exclusive right to reproduce the dwelling pictured. However, nothing in *Baker v. Seldon* prevents such a copyright from vesting the law's grant of an exclusive right to make copies of the copyrighted plans . . ."⁶⁸ Thus, again it can be seen that while copyright will not protect ideas or the right to use copyrighted material, it will protect against the actual copying of material designed for use when the material inseparably includes the copyrighted expression.

Baker v. Seldon and its progeny have been looked to by the courts in other areas,⁶⁹ and the courts can be expected to look to them in deciding the scope of protection afforded computer programs as well. A copy of a program in a medium unsuited for use in a computer is very like a business form bound into a form book: while it embodies the unprotected idea, it also inseparably includes the protected expression of the author and thus is

in the form could be easily "re-expressed"—as they in fact were in *Baker v. Sheldon*. A form simple enough to comprise a trivial expression of the underlying idea would receive no protection. See discussion of minimal content, notes 76-90 *infra* & text accompanying.

⁶³American Inst. of Architects v. Fenichel, 41 F. Supp. 146 (S.D.N.Y. 1941).

⁶⁴Bobbs-Merrill Co. v. Strauss, 210 U.S. 339 (1910); Blazon Inc. v. Deluxe Game Corp., 268 F. Supp. 416, 434 (S.D.N.Y. 1965).

⁶⁵Herman Frankel Org. v. Tegman, 367 F. Supp. 1051 (E.D. Mich. 1973); De Silva Constr. Corp. v. Herrald, 213 F. Supp. 184 (M.D. Fla. 1962) (alternate holding); Muller v. Triborough Bridge Auth., 43 F. Supp. 298 (S.D.N.Y. 1942).

⁶⁶Imperial Homes Corp. v. Lamont, 458 F.2d 895 (5th Cir. 1972); Herman Frankel Org. v. Tegman, 367 F. Supp. 1051 (E.D. Mich. 1973).

⁶⁷458 F.2d 895, 899 (5th Cir. 1972). *But see* Scholz Homes, Inc. v. Maddox, 379 F.2d 84 (6th Cir. 1967). The facts in *Scholz Homes* were very similar to those in *Imperial Homes*. The district court in *Scholz Homes* had found insufficient evidence of copying to hold that infringement had occurred. The Sixth Circuit Court of Appeals accepted that finding. The circuit court cited *Baker v. Seldon* for the proposition that architectural plans could be freely copied. However, as they decided the case on the issue of whether any copying had occurred, the court expressly refused to decide if its reading of *Baker v. Seldon* was correct. That reading has not been followed.

⁶⁸Imperial Homes Corp. v. Lamont, 458 F.2d 895, 899 (5th Cir. 1972).

⁶⁹See, e.g., Baldwin Cooke Co. v. Keith Clark, Inc., 383 F. Supp. 650 (N.D. Ill.), *aff'd*, 505 F.2d 1250 (7th Cir. 1974). The district court's opinion in this case involving an executive diary was adopted by the Seventh Circuit Court of Appeals in its memorandum opinion. The opinion provides a thorough discussion of the issues which would be involved in any "use" case.

entitled to copyright protection.⁷⁰ The legal owner of a copy of a computer program should be entitled to make machine readable copies for his personal use just as the owner of a form book may make and use copies of the forms.⁷¹ However as these copies embody the protected work as well as the unprotected ideas and systems, their distribution to others would be under the exclusive control of the copyright proprietor.⁷² Since no copy not in machine readable form could be prepared for use, such copying would fall under the same restriction as the copying of any other kind of literary work and would be exclusively the right of the author, subject only to "fair use."⁷³

Other Versions

The 1909 law secured to the copyright proprietor the exclusive right to make translations or other versions of his work.⁷⁴ The 1976 Act uses broader language: the proprietor has the exclusive right "to prepare derivative works based upon the copyrighted work."⁷⁵ "Derivative works" include translations and other versions but also include "any other form in which a work may be recast, transformed, or adapted."⁷⁶ The protection for translations under the 1909 law and the computer industry jargon which calls a particular programming system a "language" led to some imaginative explanations of why a "translation" of a copyrighted program into another system ("language") should be protected.⁷⁷ While it has always seemed clear on principle that although the ideas in a program are not protected and can be freely re-expressed in any programming system by anyone, line-by-line recasting of the expression of the program in a different system of notation should not be allowed. The 1976 Act makes clear through its derivative works section that this now is indeed the law.⁷⁸

As noted in the discussion of the nature of computer programs, it is common for a machine language object program to be created by the computer from a source program.⁷⁹ Clearly such manufacture of a useable program is not an infringement of copyright in the source program.⁸⁰

⁷⁰See *Continental Casualty Co. v. Beardsley*, 253 F.2d 702 (2d Cir.), *cert. denied*, 358 U.S. 816 (1958); *Muller v. Triborough Bridge Auth.*, 43 F. Supp. 298 (S.D.N.Y. 1942).

⁷¹See *American Inst. of Architects v. Fenichel*, 41 F. Supp. 146 (S.D.N.Y. 1941).

⁷²1976 Act, *supra* note 1, sec. 101, at 2547 (to be codified as 17 U.S.C. § 106 effective Jan. 1, 1978).

⁷³*Id.* (to be codified as 17 U.S.C. § 107 effective Jan. 1, 1978).

⁷⁴17 U.S.C. § 1 (1970 & Supp. V. 1975).

⁷⁵1976 Act, *supra* note 1, sec. 101, at 2546 (to be codified as 17 U.S.C. § 106(2) effective Jan. 1, 1978).

⁷⁶*Id.* at 2542 (to be codified as 17 U.S.C. § 101 effective Jan. 1, 1978).

⁷⁷See, e.g., *Prasinos*, *supra* note 9, at 69.

⁷⁸See note 76 *supra* & text accompanying.

⁷⁹See note 16 *supra* & text accompanying.

⁸⁰See note 56 *supra* & text accompanying.

However, it is clear that the object program is nothing but the source program recast by the machine in a form adapted to machine use. The programs which do this recasting follow the expression of the author of the source program with a consistency only a machine can maintain. As these object programs are derivative works embodying the expression of the author of the source program, their manufacture for anything but personal use would be the exclusive right of the proprietor of the copyright in the source program. While a second programmer is free to read a program and recast its ideas in his own expression,⁸¹ neither he nor a machine is free merely to transliterate the expression of the original author into a new notation.

It is common practice in the computer industry to use programs as subparts ("subprograms") of larger programs. The use doctrine would allow a purchaser to use a program as such a subpart of his own programs for personal use.⁸² However, just as a copyrighted work may not be used as part of another work without leave of the copyright holder,⁸³ a second programmer could not without license use the copyrighted work of another in a work of his own offered to third parties.⁸⁴ Since abridgements and condensations are protected as derivative works, the use of subparts or sections of a protected program in derivative works would again require the license of the copyright proprietor.⁸⁵

Minimal Content: A Limit on Copyright Protection

Even the expression of an author cannot receive copyright protection if it is so minimal that it does no more than give basic expression to an idea.⁸⁶ The courts have held that one may employ the same phraseology used in a similar copyrighted work if the topic necessarily requires it⁸⁷ and that if

⁸¹This doctrine often arises in cases involving literary works with similar plots. The courts have held that copyright does not protect plots at the level of their general theme or skeleton. See, e.g., *Shipman v. R.K.O. Radio Pictures, Inc.*, 100 F.2d 533 (2d Cir. 1938); *Nichols v. Universal Pictures Corp.*, 45 F.2d 119, 121 (2d Cir. 1930) (L. Hand, J.), *cert. denied*, 282 U.S. 902 (1931). In addition to a discussion of plot, Judge Hand's opinion in *Nichols* contains an interesting discussion of the use of standard ethnic characters and criticism of the overuse of expert testimony.

⁸²See note 57 *supra* & text accompanying.

⁸³*Addison-Wesley Publishing Co. v. Brown*, 223 F. Supp. 219 (E.D.N.Y. 1963) (book of answers to problems in plaintiff's textbooks held infringement when recognizable versions of the copyrighted problems were used in the answer books).

⁸⁴See 1976 Act, *supra* note 1, sec. 101, at 2546 (to be codified as 17 U.S.C. § 106 effective Jan. 1, 1978).

⁸⁵*Id.*

⁸⁶The argument is forcefully expressed in an alternate holding in *Crume v. Pacific Mut. Life Ins. Co.*, 140 F.2d 182 (7th Cir. 1944). The court stated that "to hold that an idea, plan, method or art described in a copyright is open to the public but that it can be used only by the employment of different words and phrases which mean the same thing, borders on the preposterous." *Id.* at 184-85.

⁸⁷*Sampson & Murdock Co. v. Seaver-Radford Co.*, 140 F. 539 (1st Cir. 1905) (city directory).

only a limited number of expressions are available to express an idea none may be copyrighted.⁸⁸ This doctrine has prevented protection under the copyright law of such diverse items as contest rules⁸⁹ and a pin in the form of a jeweled bee.⁹⁰

This doctrine precludes any copyright protection for short programs which represent only isolated ideas. For example, a program designed merely to add a string of numbers would only embody the idea or concept of addition and would not be the proper subject matter for copyright protection no matter how elegantly the idea was expressed. However, the programmer-author of a large program which allows greater variation in expression can receive copyright protection for that expression.

CONCLUSION

The general revision of the copyright law carried out in Public Law 94-553 has clarified the protection available for computer programs under the copyright law. Such programs are clearly a proper subject matter for copyright, and, with the spectre of *White-Smith v. Apollo* laid to rest, the available protection will become meaningful. Subject to the fair use doctrine the programmer-author has the exclusive right to copy his program and to adapt all or parts of it in other programs or "languages." As this note has demonstrated, this protection is very closely analogous to that given business forms and architectural plans which include the expression under copyright, and the range of cases which have discussed those problems is broad enough so that widespread use of copyright to protect programs should produce no truly novel problems of judicial interpretation. This broad and certain protection combined with the reluctance of the courts to allow patent protection to programs should lead to the wide acceptance of copyright as the protection of choice for computer programs.*

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⁸⁸*Morrisey v. Proctor & Gamble Co.*, 379 F.2d 675 (1st Cir. 1967). *Morrisey's* copyrighted sweepstakes rule involving box tops and social security numbers was copied almost verbatim by Proctor & Gamble. The court held that copyright protection did not extend to the rule because of its simplicity and straightforward nature. *Id.* at 679.

⁸⁹*Id.*

⁹⁰*Herbert Rosenthal Jewelry Corp. v. Kalpakian*, 446 F.2d 738 (9th Cir. 1971).

* A slightly different version of this note has been entered in the Nathan Burkan Memorial Competition.