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COMPUTERS, THE COPYRIGHT LAW AND ITS REVISION*

With slow progress continuing on a complete revision of the present Copyright Act,¹ increasing attention has been focused on the problems of adapting copyright law to modern technology. The present statute was adopted in 1909 and antedates the advent of motion pictures, radio, and television. Just as these modern developments once presented challenges to the framework of copyright law, two new problem areas demand solutions today: first, the question of copyright protection for computer programs; and second, the question of infringement of copyrighted works by information retrieval systems in the course of their operations.

The first question involves the nature of the proper subject matter of copyright. Does a computer program fit within the present statutory scheme for legal protection? How will the proposed revision change the present status of the program? The second question involves examination of the consequences of the use of copyrighted materials in a computer. Does such use infringe the author's copyright? Finally, if the proposed revision changes existing law on these questions, are these changes desirable?

This note will deal with these two questions, primarily as the proposed revision applies to them, but also with reference to the existing copyright law.

LEGAL PROTECTION FOR COMPUTER PROGRAMS

While many statutes are broad enough to enable judicial creativity to replace legislative revision, the present copyright statute has nearly run its course. Any attempt to fit the computer program within the present copyright law necessarily involves a strained interpretation of the statutory language. Although the judiciary is by no means unequal to the task, the proposed revision offers more accommodating statutory language.

Before examining the present and proposed copyright statutes, it will be valuable to examine briefly the nature of the computer program, as well as two alternative methods for its protection — the patent and trade secret laws.

What Is a Program?

A program may be described as an over-all plan that tells the computer what to do and when to do it. At the outset it should be noted that the program can take the form of "hardware" or "software." The former is an actual component of the computer and may be variable or fixed. For the most part it is not difficult to obtain patent protection under the statutory

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1. 17 U.S.C. §§1-215 (1964). Two almost identical bills are presently in Congress, which if passed will represent a complete revision of title 17. These are H.R. 2512, 90th Cong., 1st Sess. (1967) and S. 597, 90th Cong., 1st Sess. (1967) [hereinafter cited as the Proposed Revision].

"machine"² classification if the "hardware" is new and not obvious to man's present skill in the art.

Legal protection for the "software" program presents the vast majority of problems today. Software consists of a number of levels of instructions or information that may be fed into the computer by means of a printed or handwritten list on paper, punched cards, magnetic tape recordings, cathode tubes, or printed flow chart diagrams. The computer operates from this "input," which may consist of three different types of information presented in "machine-readable" language: raw data, reference information, and instructions for use of the input.

A software program then is a plan that incorporates these "inputs" into a unique computer language, thereby enabling the computer to solve a given problem. For example, a translation from French to English would be accomplished by a plan including the French text (raw data), a dictionary of French-English word pairs (reference information), and instructions for performance of the translation.³

Is a Computer Program Patentable?

From the standpoint of legal protection, a patent is highly desirable. It grants to the patentee, his heirs or assigns, for the term of seventeen years, the right to exclude others from making, using, or selling his invention throughout the United States.⁴ Unlike copyright protection, independent development is not a defense against a claim of patent infringement.

The courts have not specifically passed on the question whether patent protection is available for computer programs.⁵ However, the Patent Office has stated that a program is not patentable since it consists of mathematics or "an area of thought" not within the statutory classes.⁶ Strangely, the Patent Office's full statement omits the term "process," which is one class of patentable invention listed in the statute.⁷ In fact the only patent litigation concerning matter comparable to a program has centered around the word "process."⁸

In addition, the Patent Office's statement perhaps inaccurately categorizes computer programs as mere unpatentable "mathematics." Certainly mathe-

2. 35 U.S.C. §101 (1964).

3. Banzhaf, *Copyright Protection for Computer Programs*, in ASCAP, *COPYRIGHT LAW SYMPOSIUM* 118 (1964).

4. 35 U.S.C. §154 (1964).

5. *But see* Hamlin, *Computer Programs Are Patentable*, 7 *ASS'N FOR COMPUTING MACHINERY COMMUNICATIONS* 581 (1964).

6. 141 *PATENT, TRADEMARK, AND COPYRIGHT WEEKLY REPORTS* III, No. 6 (1961).

7. 35 U.S.C. §101 (1964) defines patentable inventions as "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof."

8. *See Ex parte Egan*, 129 U.S.P.Q. 23, 26 (Pat. Off. Bd. App. 1960). The board considered it perfectly possible to have a patentable process in which apparatus is used in a particular way to get a particular result. Certain precalculated charts were analogized to a calculating machine and defined a statutory *process* of using a machine or manufacture in a new way.

matics may enter into card punching or typesetting, but few patentable inventions have traveled from drawing board to reality without similar aid of mathematics.

A recent development threatens to nail the lid on the possibility of patent protection for any computer program. On February 21, 1967, Senate Bill 1042 and House Bill 5924 were introduced in Congress. These bills present a suggested revision of the present patent statute in response to the recommendations contained in the Report of the President's Commission on the Patent System.

Section 106 of the Senate Bill states that computer programs are not patentable. The bill would make any plan of action or set of instructions unpatentable if it causes a controllable data processor or computer to perform. This provision has been opposed by the American Bar Association Committee on Patent Law Revision.⁹

It is noteworthy that the proposed patent law revision does not adequately define the term "program." Further, it should be noted that in the history of the patent system only one important technological area has been legislatively excluded, that is, atomic weapons. Even the most ardent opponent of general program patentability does not deny there may be a few programs that could meet the statutory requisites.

One thing is certain. Patent protection, as a practical matter, is not currently available for the computer program. A second possible solution to the program creator's dilemma is to keep the program a trade secret.¹⁰

Trade Secrets

Trade secret rights can be maintained as long as the program is kept secret by the owner and others to whom knowledge of it is entrusted. The owner can secure payment for use of his secret and recover damages from persons who wrongfully disclose it or obtain it in bad faith. However, criminal sanctions for the conversion of trade secrets are not presently available.¹¹ Obviously this is a very limited form of protection that offers nothing for the program creator who wishes to sell his program on the open market. Further, this method limits the benefit to the public as well as to the owner.

Since patent protection is not presently available, and trade secret protection is highly restrictive, the copyright law may offer the only effective alternative.

Programs Under Present Copyright Law and Its Proposed Revision

The cornerstone provision of the present statute¹² defines the proper

9. Resolved, that the Section is opposed to the elimination of computer programs from the area of patentable subject matter. ABA Special Meeting, Section of Patent Trade-mark and Copyright Law (1967).

10. Wessel, *Legal Protection of Computer Programs*, 43 HARV. BUS. REV. 97 (1965).

11. Trade Secrets Bill, H.R. 5217, 88th Cong., 1st Sess. (1963). This bill would have made it a crime to steal trade secrets in interstate or foreign commerce.

12. 17 U.S.C. (1964).

subject matter of copyright as "all the writings of an author."¹³ An author may obtain the copyright by "publication . . . [of the work] with the notice of copyright required."¹⁴

Is a computer program a "writing" under the present statute? Congress has not limited the concept of a writing to the simplest sense of the word.¹⁵ Writing has been defined for copyright purposes to include "[A]ll forms of writing, painting, engraving, etching, etc., by which the ideas in the mind of the author are given visible expression."¹⁶ The primary criteria are that the work have a permanence (fixation) and tangibility that would enable it to be copied.¹⁷

Under this broad definition it would appear that at least some forms of programs fit within the statutory concept of a writing. Written list programs and printed punched cards should qualify since they are readable. However, magnetic tapes and nonprinted punch cards cannot be read and therefore may be analogous to perforated piano rolls, which are not copyrightable because they are not "addressed to the eye as sheet music, but they form part of a machine."¹⁸

Section 102 of the proposed revision begins:

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.

The word "writing" is not included, and this would appear to remove the conceptual difficulty of fitting the program within the vague writing category. The committee reports suggest the new wording is meant to broaden the scope of the present cornerstone provision.¹⁹ Although the bill perpetuates the requirement of a "tangible medium of expression," this medium may be one "now known or later developed." This language would specifically overrule the cases that made statutory copyrightability depend upon the form or medium in which a work is fixed.²⁰ The proposed cornerstone provision concludes that fixation is sufficient if the work "can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device."²¹

13. 17 U.S.C. §4 (1964).

14. 17 U.S.C. §10 (1964).

15. 17 U.S.C. §5 (1964). This section includes in the classification of works for registration such things as motion pictures, photographs, labels, maps, and plastic models.

16. *Burrow-Giles Lithographic Co. v. Saxony*, 111 U.S. 53, 58 (1884).

17. Lichtenstein, *Study of the Term "Writings" in the Copyright Clause of the Constitution*, 31 N.Y.U.L. REV. 1263 (1956).

18. *White-Smith Publishing Co. v. Apollo Co.*, 209 U.S. 1, 9 (1907).

19. See H.R. REP. No. 83, 90th Cong., 1st Sess. 14 (1967) [hereinafter cited as H.R. REP. No. 83]. The committee clearly states the new bill would better cover "scientific discoveries and technological developments [that] have made possible new forms of creative expression that never existed before."

20. See *White-Smith Publishing Co. v. Apollo Co.*, 209 U.S. 1, 9 (1907).

21. Proposed Revision §102.

The term "original works of authorship" in the proposed revision is intended to incorporate without change the established standard of originality.²² A work must be original in the sense that the "author has created it by his own skill, labor, and judgment, without directly copying or evasively imitating the work of another."²³ A copyrightable work must be original with the author and contain a "modicum of creative work."²⁴ Although some individual creativity is required, a work will qualify if the author makes "substantial changes in material already known to the public."²⁵

Since the proposed revision, as the present law, does not include any standard of novelty, ingenuity, or esthetic merit²⁶ it is likely that many computer programs could meet these requirements. The fact that computer operation requires a program author's work to be distilled into numerical or word formulae should not preclude the copyright of the work. While there is little doubt that many programs are mere mathematical formulae, it seems possible that even *known* formulae could be so arranged as to achieve the required degree of uniqueness.

In light of the above brief survey of the "writing" and "authorship" requirements under the present law and the proposed revision, it will be helpful to note a recent change of position of the Copyright Office with regard to registration of computer programs.

An author establishes a claim to copyright of his work under the present statute by "publication"²⁷ of the work with the notice of copyright²⁸ attached to an accessible portion of the copies published. The actual copyrightability of a work is determined by the courts if need arises. No court to this date has decided the question whether a computer program is copyrightable. As noted previously, such determination would be made primarily by consideration whether a program is a "writing of an author" that contains the requisite degree of originality.

As a procedural condition precedent to an action for infringement of statutory copyright, the author must register his claim and deposit copies of the work with the Register of Copyrights.²⁹ Once duly registered, a claim to copyright is presumed valid,³⁰ but courts reserve the final right to determine copyrightability.

The Copyright Office recently decided to accept some programs for registration, but expressed doubt whether a program is a "writing of an author" or a sufficient "copy" to be accepted for registration.³¹ Despite this doubt

22. H.R. REP. NO. 83, at 14.

23. *Hoffman v. Le Traunik*, 209 F. 375 (N.D.N.Y. 1913).

24. *Andrews v. Guenther Publishing Co.*, 60 F.2d 555, 557 (S.D.N.Y. 1932).

25. *Id.*

26. *Supra* note 22.

27. 17 U.S.C. §26 (1964) defines *publication* as "the earliest date when copies of the first authorized edition were placed on sale, sold, or publicly distributed."

28. 17 U.S.C. §19 (1964) states that notice consists of either the word "Copyright," the abbreviation "Copr.," or the symbol "©" accompanied by the name of the proprietor and the year in which the copyright was secured for publication.

29. 17 U.S.C. §13 (1964).

30. 17 U.S.C. §20 (1964).

31. Copyright Office Circular 31D (Jan. 1965).

and in accordance with its policy of resolving issues in favor of registration where possible, the Office will now consider registration for a program if:³²

(a). The elements of assembling, selecting, arranging, editing, and literary expression that went into the compilation of the program are sufficient to constitute original authorship.

(b). The program has been published, with the required copyright notice; that is, "copies" (i.e., reproductions of the program in a form perceptible or capable of being made perceptible to the human eye) bearing the notice have been distributed or made available to the public.

(c). The copies deposited for registration consist of or include reproductions in a language intelligible to human beings. If the first publication was in a form (such as machine-readable tape) that cannot be perceived visually or read by humans, something more (such as a print-out of the entire program) must be deposited along with two complete copies of the program as published.

(d). An application for registration is submitted on Form A as a "book." . . .

(e). The applicant also submits a brief explanation of the way in which the program was first made available to the public and the form in which the copies were published. . . .

The Copyright Office has thus taken a first and necessary step toward solving the dilemma in which the program creator, desirous of legal protection, finds himself. Nevertheless, under the present statute the courts will have to exhibit a high degree of flexibility and imagination to find certain types of programs copyrightable. If the above discussed portions of the proposed revision are adopted, the necessity for creative judicial rewriting would be removed.

If legal protection is allowed under the present statute or the proposed revision, what is the scope of the protection under the copyright law? Since copyright protection extends to the means of expression and not to the ideas being expressed,³³ copyright is not the answer if the author seeks protection for the novelty of his idea. However, if he wishes to sell, lease, rent, or license copies of the program on a large scale, copyright would make this possible.³⁴ Under the revision, with its broad definition of copying,³⁵ it is likely that mere use of a copyrighted program in another computer without permission would constitute infringement. The higher degree of protection granted by the revision would likely benefit the owner of the copyright on a program.

As has been indicated, the proposed revision makes it clear that some programs are copyrightable. From the standpoint of the author of a program, the revision would at least assure him some degree of legal protection and opportunity for financial benefit beyond the restrictive trade secret law. Further, since most programs would probably fail the stricter tests of

32. *Id.*

33. H. BALL, *LAW OF COPYRIGHT AND LITERARY PROPERTY* (1944).

34. 17 U.S.C. §§101-06 (1964).

35. Proposed Revision §101.

“novelty” and “unobviousness”³⁶ under the patent law, the revision offers the only assured protection for the majority of computer programs.

COMPUTER USE OF COPYRIGHTED WORKS

The Copyright Owner's "Bundle of Rights" Under the Revision

To begin a detailed consideration of how the proposed revision will affect computer use of copyrighted works, it is necessary to examine the nature of the rights granted to the copyright owner. Section 106 of the revision reworks the present “bundle of rights” to create a breakdown of five copyright components over which the owner has the “exclusive rights to do and to authorize:³⁷

- (1). to reproduce . . . in copies;
- (2). to prepare derivative works;
- (3). to distribute copies . . . to the public;
- (4). to perform . . . publicly;
- (5). to display . . . publicly.

It is, of course, a little hazardous yet to predict just how the definitions of these five basic rights³⁸ will be interpreted in relation to their infringement by computers. The newness of the definitions and of computers themselves compounds the fact that each right must be defined in relation to all three phases of an information system's cycle: input, manipulation, and output.

The right to make copies has been changed substantially by the proposed revision's redefinition of “copies.” The old loophole that excluded computer input (for instance, magnetic tapes or punch cards) from classification as copies because they are not “readable” by ordinary persons has been closed: “Copies are material objects . . . in which a work is fixed . . . and from which the work can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or other device.”³⁹ It seems clear that the committee intended to grant protection against reproduction of machine-readable copies for input into computers. Thus, although such a copy is completely meaningless to the average person and in itself cannot harm the copyright owner — until the input is retrieved — there is statutory recognition that it poses a potential inroad on the author's rights. As under present law, a copyrighted work would be “copied” by reproduction “in whole or in any substantial part.”⁴⁰

The second protection under section 106 applies to unauthorized production of “derivative works.” The term “derivative works” includes translations, abridgments, condensations or adaptations; seemingly “translation” includes

36. *McIntyre v. Double A Music Corp.*, 179 F. Supp. 160 (S.D. Cal. 1959).

37. Proposed Revision §106.

38. Proposed Revision §101 defines the terms used therein.

39. Proposed Revision §101.

40. H.R. REP. No. 83, at 24.

putting a work into machine-readable form for computer use.⁴¹ For some purposes of computer operations, this second right is broader than the right to copy since it requires no "fixation" in order for an infringement to occur.⁴² Accordingly, computer output in the form of a television image could not be a "copy," but such an ephemeral reproduction could be a "derivative work."

The remaining three rights of copyright owners are protected by the proposed revision only against infringements made to or before the public. The 1909 Act protects against unauthorized performances made "publicly for profit"; a performance is considered public if made open to the public in general.⁴³ The revision alters this familiar provision, which serves as an exemption for education, in two major ways. First, the revision establishes that "the public" is not limited to the public at large, but includes "a substantial number of persons outside of a normal circle of a family and its social acquaintances . . ." ⁴⁴ Thus, computer output into classrooms could infringe the rights to public distribution, performance, and display. Computer output into a library, even an office, could well be public output. The House Report on the revision makes it plain that this redefinition of "public" is meant to protect copyright owners against even limited public uses by "projection equipment, closed and open circuit television, and computers for displaying images of textual and graphic material to 'audiences' or 'readers.'" ⁴⁵ The second change is that the revision simply drops the element of profit as a requirement for infringement, but makes certain strictly limited exemptions for nonprofit users.⁴⁶ The combination of these two changes drastically reduces the authorized use of copyrighted works in computers for educational purposes.⁴⁷

Applying these redefinitions to the last three rights in the new "copyright bundle," the increased protection may have little meaning for the distribution right as against computers. An infringement by distribution requires tangible and fixed copies of the work infringed, and in most instances where computer output would be distributed to the public, electronic images could be utilized rather than fixed copies.

41. The committee report does not so state, however, it discusses information systems in this context, see H.R. REP. NO. 83, at 24. *Hearings on S. 597 Before the Subcomm. on Patents, Trademarks and Copyright of the Senate Comm. on the Judiciary*, 90th Cong., 1st Sess., pt. 2, at 555 (1967) [hereinafter cited as *Senate Hearings*].

42. H.R. REP. NO. 83, at 24.

43. 17 U.S.C. §1 (c) (1964).

44. Proposed Revision §101 (1).

45. H.R. REP. NO. 83 at 14.

46. See text following subheading *The Revision's Specific Exemptions*.

47. The degree to which there will be an actual reduction under the revision is open to considerable question. Most authorities hold that the present "educational exemption" applies only to nonprofit "performances" as such; but others believe the educational exemption is much broader and allows the making of copies. If the former view is correct, then of course the revision provides not so much a reduction of the exemption as a re-establishment of the status quo under different terms. In either case, education is the loser; the only question is whether the publishers have won a victory or merely held the line. See *Hearings Before Subcomm. No. 3 of the House Comm. on the Judiciary*, 90th Cong., 1st Sess., pt. 3, at 1569-71 (1967) (Seibert testifying).

But the redefinition — both as to narrowing the meaning of “public” and removal of the blanket nonprofit exemption — is significant with respect to the performance and display rights. “Perform” and “display” are defined together in the revision’s section 101, and there is no significant distinction between them for purposes of information retrieval. (The only evident distinction is that, in the case of retrieval of sounds stored in a computer, there could be a performance but not a display, the latter being a visual right.) Neither right is limited to protection against initial infringements only. This means that a computer could infringe either right, even at several-removed stages of operation; every successive performance or display is a new infringement. Neither right requires tangible fixation for an infringement, as do the copying, derivative works and distribution rights. Therefore, the computer would infringe them by publicly producing, without authorization, images on a cathode ray tube.

Obviously, the five rights of copyright owners will overlap in many cases, and an infringement by computer of one right may be defined as an infringement of one or more of the others. For instance, a computer print-out to students in a classroom could infringe both the copying and the distribution rights; projection of a television image could infringe the rights to make derivative works, perform, and display. In most instances it would seem relatively simple to pick the right infringed and allow the copyright owner to recover. However, especially in the case of computers, it is important to understand or at least attempt to predict the precise application of each element of the copyright framework to the use of copyrighted materials. It may not be enough to look ahead to the obvious infringement; the versatility of computer operations creates tremendous variation in the possible uses of materials, and courts may define some of these as unexpected infringements. It would be easy for an information system, by making a slight change in operations by initiating a novel use, to infringe one of the five rights that previously had seemed inapplicable to the system. Moreover, each of the five rights is independent, may be bought and sold separately, and may be individually enforced.⁴⁸

APPLICATION OF THE REVISION’S FIVE RIGHTS TO THE COMPUTER CYCLE

Input. It remains to discuss the potential infringements of copyright by computers in each of their three stages of operation: input, storage, and output. In the input stage, the rights susceptible of infringement under the revision are the copying and derivative works rights — a priori, since the other rights must be infringed publicly and input is not a public operation. Unauthorized conversion of a copyrighted work into machine readable form, as by making punch cards, is copying; and the actual conversion of this machine language into another form in which the computer system may store it, as by making a disc file, a magnetic tape, or any other storage unit, is again production of a copy. These processes also result in derivative works since they are “translations.” Of course, if the input operation consisted only of feeding

48. Proposed Revision §201 (d).

a condensation or abstraction into a computer, only the derivative works right could be infringed.

The computer, then, is prevented from making a copy for input even though this single copy is "unreadable," may never be used as output, and so cannot yet have damaged the author's market. House Committee hearings on the revision, while by self-admission touching on computer uses "rather lightly,"⁴⁹ did seriously consider the fairness and practical effect of this protection against computer input. It was argued by those concerned with fostering computer uses that protection against input constitutes a penalty against technological progress. For instance, if the input is for use in a research project and is fed into a computer for analysis, the researcher has infringed the copying or derivative works rights. If, however, the researcher reads the work himself, cuts it up and pastes its pages on index cards, he may personally analyze this product without any fear of a copyright infringement. The researcher, therefore, must choose whether he wishes to devote man-hours to the task of analysis, or to risk an infringement by machine analysis, or to purchase the owner's rights—and he must do this before he knows whether the work will be of any use to him.⁵⁰ If one desires to perform a play on stage or read a work aloud before a class, he need only concern himself with the performance rights that he could infringe by giving an unauthorized performance. But the computer that is used to give a performance via a television system has infringed the reproduction or derivative works rights long before it is ready to give a performance.

On the other hand, publishers and authors point out that with computer input, the owner loses control over future reproduction of his work. And copies made for storage in information systems have the potential to replace many printed copies in future uses of the system by its operators. Copyright owners have reason to fear that "the mere presence of an electronic reproduction in a machine could deprive a publisher of a substantial market for printed copies. . . ."⁵¹ This fear may be well founded although computer users argue that information systems can actually stimulate the market for the works fed into them by bringing them quickly to the attention of many more potentially interested readers.

Perhaps the most telling argument for protection against computer input has been the claim by copyright interests that if they are not protected at the input stage it may prove impossible to give them adequate protection against later uses by information systems. The same point, however, is true as to the presence in a library of a Xerox machine. Moreover, the computer interests point out that computers can easily be set to record (and bill the user for) all uses made of their stored information.⁵² At any rate, it is certain that the input cycle of an information system is, under the revision, completely subject to the rights of the copyright owner.

49. H.R. REP. NO. 83, at 24.

50. *Senate Hearings* pt. 2, at 588 (Oettinger testifying).

51. H.R. REP. NO. 83, at 25.

52. *Senate Hearings* pt. 2, at 585 (Oettinger testifying); see EDUCOM, *infra* note 72, at 10.

Storage or Manipulation

During the storage or manipulation phase, there will probably be no infringements; such is the express intent of the Revision Committee.⁵³ Fears have been raised by computer interests nonetheless that manipulation in computers would infringe under the proposed revision as it now is written;⁵⁴ correspondingly, concern has been expressed by copyright interests that the Committee seemed to disregard an area where protection is merited.⁵⁵ Undoubtedly the issue deserves some attention; after all, this stage involves much more than the word "storage" implies. It can include — without proceeding to output — analysis, indexing, abstracting, translation, and problem solving. The right to make derivative works is susceptible of infringement in such steps, since that right is infringed without the "public" element and without the requirement of a fixed copy.⁵⁶

These are research processes rather than end products, although the same could certainly be said of the input phase. The difference in the drafter's treatment, no doubt, stems partly from the practical argument of authors that they must either control input or lose control. Apparently manipulation has been analogized to the reading of a work, rather than to production of a derivative work, which it is by strict definition. It seems appropriate that a word often interchanged with manipulation is "scanning," which implies a mere reading. Congressman Robert W. Kastenmeier has flatly stated for his Revision Committee that "[M]ere scanning or manipulation of the contents of a work within the system would be outside the scope of copyright protection."⁵⁷

Output

Output seems to be the least controversial stage of the information system operation. Computer interests, recognizing that output is the point at which the computer must either be subject to the author's rights or injure him economically, do not seem to object to paying copyright royalties for output.⁵⁸ The justification of protection here is most obvious, and the fact of infringement is likely to be most apparent. Computer output can often be analogized to a book copy (as in the case of a print-out of text) or to a standard perform-

53. H.R. REP. NO. 83, at 25.

54. Miller, *Information Retrieval*, IDEA (Conference No. 1966, at 175).

55. *Hearings Before Subcomm. No. 3 of the House Comm. on the Judiciary*, 90th Cong., 1st Sess., pt. 1, at 1147 (1967) (Seibert testifying) [hereinafter cited as *House Hearings*]. J. MARKE, *COPYRIGHT AND INTELLECTUAL PROPERTY* 102 (1967) (citing American Textbook Publishers Institute).

56. This is so according to the revision's bare terms §§101, 102, 106, despite the unsupported statement in the Committee report, H.R. REP. NO. 33, at 25, that no derivative work is produced in manipulation. The Committee's mistake seems illustrative of their lack of information as to computers.

57. Address by Robert W. Kastenmeier to the American Patent Law Association, APLA BULL. Jan.-Feb. 1967, at 49. Congressman Kastenmeier is Chairman of the House Subcommittee on Patents, Trademarks, and Copyrights.

58. See, e.g., *Senate Hearings* pt. 2, at 555-56 (Morton testifying).

ance or display (as in the case of a television image). Even so, treatment of all output as if it were a printed copy or standard public performance is not entirely satisfactory. The computer, for one thing, may have the ability to analyze a particular work and tell a researcher whether he needs the work, without the necessity of the researcher's buying or reading a copy. On the other hand, computer output does not embody a single potential infringement but carries with it a number of possible earlier infringements committed at the previous steps of input and manipulation. Further, the computer's value is based on a tremendous number of works contained in its circuits, and a single print-out can scarcely be considered without also considering the infinite number of possible infringements, which make the desired output possible.

Information retrieval or output may be divided for purposes of copyright law into three main categories: fixed and tangible; visual and ephemeral; and auditory. Fixed, tangible output may be in the form of a print-out or a photoduplication. The information retrieved may consist of an entire copyrighted work or it may be only an index, condensation, or excerpt. According to its form, this type of output (if unauthorized) would infringe the copying or derivative works rights. Such copies would likely go to individual users, for example, a single console operator. Thus, in practice the distribution, performance, and display rights should not be infringed; all require "public" reception.

Visual images such as those projected on a cathode ray tube are effective in providing group access, as in teaching situations, to the resources of an information system. Therefore, the rights most obviously infringed by this ephemeral form of output would be those of public performance and display, although a derivative work might also be produced. Since the rights of reproduction and distribution are protected only against fixed copies, ephemeral output cannot infringe them. Furthermore, the performance and display rights are infringed only by a substantial showing; thus, considerable teaching use would be possible without infringement of these rights. However, the derivative works right would stand in the way of many desirable uses of visual output.

Auditory output, if less important in information systems, is just as effectively subject to copyright restrictions. Since this form of output is both ephemeral and nonvisual, it could infringe only the rights to public performance and derivative works. The former right would be infringed only by performance of all or substantially all of the copyrighted work in public. But the right to make derivative works, as in the case of visual output, seems to stand in the way of more than a minimal unauthorized use. It is worth noting that the House Committee on the revision discusses information systems in context with the right to make derivative works, although no reason is given for using this particular right to protect copyright owners from computer infringement.⁵⁹

59. H.R. REP. NO. 83, at 25.

LIMITATIONS ON THE AUTHOR'S EXCLUSIVE RIGHTS

The Doctrine of Fair Use

A discussion of fair use and the specific exemptions offered by the proposed revision to certain users of copyrighted material has been postponed in an attempt to show more clearly how the new bill's definitions of copyright bind computer operations in infringement. Both fair use and the specific exemptions are included in the revision as a means of granting freedom from infringement in certain situations, which will be examined below in relation to information systems.

The doctrine of fair use, judicially created and now incorporated into the revision, traditionally has allowed use of copyrighted works for such purposes as literary criticism, news reporting, and teaching purposes. It would be a common law fair use to quote a short portion of a copyrighted work for critical comment or to reproduce a poem for students' examinations. In section 107, the revision includes four factors, all familiar to the common law doctrine, to be considered in determining whether a particular use is a fair use under the new law:

- (1). the purpose and character of the use;
- (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.

The House Report emphasizes that the Committee had "no purpose of either freezing or changing the doctrine," as judicially developed, and that "any educational uses that are fair use today would be fair use under the bill."⁶⁰ The report also emphasizes that "the doctrine of fair use would apply to all stages in the operations of information storage and retrieval systems."⁶¹

However, a reading of the Committee's examples and statements of intent as to fair use confirms that the doctrine can hardly apply significantly to computer operations.⁶² Since the revision subjects computer input to copyright restrictions, fair use could allow only minimal excerpts of copyrighted works to be stored without authorization. An information system that depended strongly on this sort of input would scarcely be able to store sufficient information to be valuable. If the computer were fed a large amount of fair use input, even this limited degree of use of copyrighted materials "could turn into an infringement if the copies were accumulated over a period of time . . . or were collected with other material from various works so as to constitute an anthology."⁶³

Disregarding the impotence of fair use to provide any exemption from infringement for educational or similar computer input, the fact remains that

60. H.R. REP. NO. 83, at 31.

61. H.R. REP. NO. 83, at 35.

62. H.R. REP. NO. 83, at 32-36.

63. H.R. REP. NO. 83, at 34.

even output dependent on fair use would be unsatisfactory. The report states that examples of fair use output might be "bibliographic lists or short summaries."⁶⁴ While such output is often useful, if the information system were open to any sizable number of users it is probable that even these examples would become infringements at some point. Fair use simply was not developed to deal with operations having the scope of information systems. The doctrine was developed in order to allow individual teachers or literary critics reasonable leeway so long as they did not reduce the market for the copyrighted work used.⁶⁵ The revision, despite the committee's solemn statement of applicability to computers, does nothing to stretch fair use beyond these bounds.

Within these narrow confines, of course, fair use does have a minimal relevance to computer use of copyrighted works. The use of the ideas, concepts, or facts expressed in a copyrighted work constitutes fair use since copyright only protects the work's form of expression.⁶⁶ Consequently, human research could extract the ideas needed to feed into the machine, then convert them into computer input. Alternatively, if a complete work were legally stored (as with the author's permission) in an information system, it would be fair use to extract as output the ideas or concepts in the work, or other minimal portions of the work. Other likely isolated fair uses in the form of computer output are excerpts (but probably limited to "insubstantial excerpts")⁶⁷ indices, abstracts, and analyses (if not to the extent of constituting a derivative work).

In addition to the known limitations of fair use, the protection it affords is so uncertain that it could not safely be relied on by a large information system.⁶⁸ For instance, the point at which a number of fair uses turns into a cumulative infringement is unknown. Caution is in order since "there is not a single case . . . where the doctrine of fair use has been tested with respect to the reprinting of even the smallest portion of a copyrighted work by a Xerox or some other photocopying device,"⁶⁹ much less by a computer. The incorporation of the doctrine of fair use into copyright law certainly does nothing to define its traditionally vague boundaries.

The Revision's Specific Exemptions

Present copyright law includes a general exemption from copyright infringement for nonprofit performance.⁷⁰ The revision does not favor education with any such general exemption and instead creates several specifically limited exemptions. However, if the new exemptions include any educational uses of information systems, it is only coincidental and not because the committee intended to foster the new technology.

64. H.R. REP. NO. 83, at 35.

65. J. MARKE, *supra* note 55, at 98 (quoting Bella Linden).

66. *Holmes v. Hurst*, 174 U.S. 82 (1899).

67. Linden, *Law and Computers in the Mid-Sixties* 227 (ALI-ABA Joint Committee on Continuing Legal Education 1966).

68. *Id.* at 230.

69. J. MARKE, *supra* note 55, at 98 (quoting Bella Linden).

70. 17 U.S.C. §1 (1964).

The Classroom Exemption

Section 110(1) of the revision provides for exempt use of copyrighted materials in classroom situations. In order to obtain the exemption, the use must be: (1) in a classroom or similar place; (2) in a face-to-face situation with both an instructor and regularly enrolled class present; and (3) part of the systematic instructional activities of a nonprofit educational institution. The exemption applies only to the performance and display rights, so that reproduction of copies for students is not exempted. In effect, this subsection simply recognizes that the slide projector has been invented; the exemption is blind to the use of computers in teaching. Although this is the only exemption that might have effectively allowed an exempt teaching use for computer systems, the House Report sketches the provision as follows:⁷¹

He [the teacher] could read aloud from copyrighted text material, act out a drama, play or sing a musical work, perform a motion picture or film strip, or display text or pictorial material to the class by means of a projector.

Within this provision, computerized teaching could be used if: (1) the computer were in the same place as the class (evidently within the same room); and (2) the only output were auditory or cathode tube type images. Subject to these limitations, computers could be installed in the classroom with each student having his own console to take advantage of the possibilities of individual activation. The classroom requirement, however, flies in the face of educators' attempts to eliminate "the stultifying limitations imposed by classrooms."⁷² The systematic instruction requirement eliminates independent student research and could even mean that all students would have to be doing about the same thing at the same time — thus strangling the benefits of individual activation. The requirement that the exempt use take place "in" a classroom seems to mean that every classroom must have its own computer; the House Report comments that there may be "no transmission beyond the place where the copy is located."⁷³ Consequently, only small computers, and probably only a few of them, could be afforded for teaching purposes. If these hindrances do not altogether prevent utilization of computers in teaching, educators still must contend with the stark fact of input liability — for which no exemption is provided. Utilization of information systems in libraries for research (whether student, professorial, or institutional) or inter-institutional exchanges of knowledge is completely ruled out of the exemption.

Educational Broadcasts

Section 110(2) of the revision, the other important educational exemption, is obviously written to provide for educational television. Its introductory language, exempting certain "transmission[s] by a . . . nonprofit organi-

71. H.R. REP. NO. 83, at 40-41.

72. EDUCOM, April 7, 1967, at 9.

73. H.R. REP. NO. 83, at 42.

zation" is broad enough to cover computerized teaching also; but the conditions it imposes eliminate the use of computers, and such was the express intent of the drafting committee. The broadcast exemption frees performances and displays by transmission from copyright liability where: (1) the transmission is part of the systematic educational activities of a nonprofit educational institution; (2) the transmission is made primarily for reception in classrooms or similar places; and (3) the time and content of the transmission are controlled by the transmitting organization, not by individual activation of the recipients. The third requirement (subclause D of section 110 (2)) prevents effective use of this exemption by information systems since individual activation is one of the most vital elements in computerized teaching. Subject to this restriction, of course, ETV broadcasts could use computers in their programs. The result might be more efficient television programs, but it could not become computerized teaching. As in the "classroom exemption," only performances and displays are exempt — there is no provision for copies reproduced as either input or output.⁷⁴ And again, no use could be made of the broadcast exemption for purposes of research, library activities, or exchanges of knowledge. It might be added that even for this exemption's intended beneficiary, educational television, these provisions present serious difficulties. ETV serves not only classrooms, but is a general disseminator of cultural programs for entire communities. The latter function will be limited by the revision's requirement that broadcasts be aimed "primarily" at students in classrooms. The Senate version of the revision contains a further limitation on this exemption: transmissions are limited to a radius of one hundred miles.⁷⁵

The writing of this exemption offers insight into the manner in which computers were dealt with during the entire rewriting of the copyright law. The House Report on the bill comments as to section 110 (2):⁷⁶

A point of serious concern to authors and book publishers, among others, has been the possible danger that in the future, section 110 (2) would be construed to exempt transmissions of visual images from a computer or "memory bank" to individual students in classrooms, and that such transmissions would displace the market for textbooks, workbooks, tests, answer sheets, and other instructional material. Recent developments in teaching indicate that these fears may be justifiable. Clause (2) of section 110 was intended to deal primarily with instructional broadcasting as it is now understood, and was not intended to exempt the transmission of visual images to individual students at their control, thereby substituting for copies. The committee has therefore adopted subclause (D) to confine the exemption to what was intended.

There is no attempt to provide a compromise or alternative by which education could implement the new technology. Computer uses are simply excluded in favor of copyright protection for authors and publishers.

74. H.R. REP. NO. 83, at 41.

75. *Senate Hearings* pt. 2, at 587.

76. H.R. REP. NO. 83, at 46.

The Exemptions and Educational Use of Computers

Putting the two exemptions side by side, their respective effects on the use of information retrieval systems are these: section 110(1) allows no transmission beyond the place of reception, thereby hamstringing teaching use of computers since a school would have to provide a computer per classroom; section 110(2) allows no individual activation, thus eliminating one of the most valuable aspects of computerized instruction—use by the student of the computer's "teaching ability" to proceed at his own pace. Finally, even the narrow protection afforded information systems by section 110 is devitalized by the ever-present liability for infringement by input of copyrighted material.

It is evident that any exemption for nonprofit computer uses is illusory. Indeed, if any were even intended, one would have expected to see a provision exempting input under certain circumstances. Though the revision purports to provide specifically for classroom uses free of copyright liability, in fact it may deny the benefits of technological progress to students and schools. Schools that do institute computer teaching and other uses of information systems may be forced to rely heavily on noncopyrighted works. Or they may continue, unnecessarily, on traditional methods of instruction. Even if schools were able to pay all royalties necessary for development and use of information systems, it would be impractical for them to seek the hosts of clearances required not only for input, but also for various types of output.⁷⁷

With regard to teaching uses and inter-institutional exchanges of knowledge, the situation for the present is best characterized as a failure to stimulate and thus a restriction on future prospects. The result for research and library uses is more clearly a penalty on technological advances. If, for example, a reader checks a book out of a library, there is no additional copyright toll or potential infringement. Yet if the library introduced machines by which books could be displayed for readers—by which, for instance, books on a "reserve shelf" could be read by many students simultaneously—there would be no exemption from display infringement, even if the library had purchased its own copy of the book and the right to make a machine copy for input.

The necessity of compensation to copyright owners as incentive for creative efforts can scarcely be over-emphasized; yet neither can the needs and importance of education. It is unfortunate that the revision's approach to these two values seems to place them in almost irreconcilable opposition. There are a number of arguments indicating that compromise could be reached between computers and copyright, that nourishment of one is not necessarily denial of the other. This is an age of exploding technology, information, and markets, and its economic "by-products" should support both sides comfortably. It is well taken, for instance, that inputting a work into a large information system may be the best advertising the work could obtain.⁷⁸ Moreover, education and copyright must live or fail together, for

77. See EDUCOM, *supra* note 72, at 8. The establishment of clearing houses similar to ASCAP or BMI, which will be discussed *infra*, would alleviate this problem.

78. *Senate Hearings* pt. 2, at 559.

education creates the market for books and supplies publishers with their material and authors. Finally, the technological advances, which publishers and authors fear will diminish the market for books, are still many years from widespread realization — if, indeed, computers will ever significantly “replace” books.⁷⁹ The extremely thorough coverage of copyright liability that the revision throws over computers has led one educator to remark “[i]n a sense, we are the victims of our own rosy predictions.”⁸⁰

A Refusal To Look Ahead

In review, there is little in the revision as it applies to computers that is basically new. Despite widely disseminated and accepted predictions of the coming changes in technology that will affect copyright law, the Committee chose to adhere to traditional copyright lines, admitting quite candidly that it devoted little attention to the potentialities of the computer. The newness in what is justly called a “protection-oriented bill”⁸¹ consists of a tight reweaving of traditional concepts to ensure that copyright will be protected against infringement by computer. The bill’s redefinition of “copies,” its reconstitution of the nonprofit performance exemption, and its grant of an explicit display right to authors — are factors that in combination may well amount to an “overkill.”

It has already been mentioned that the revision seems to treat computer and copyright interests as strictly competing ones. The publishers, in particular, have painted the issues as involving “either-or” propositions.⁸² For the present these issues have decidedly been resolved in favor of a strong copyright law. It is not at all impossible that in the near future, computer users could become the more deserving of such preference by a society that will become increasingly indebted to — and dependent upon — computer technology. In any case, the question could profitably be posed whether the “either-or” of the revision’s tradition-minded approach is the relevant inquiry at all; that is, whether traditional copyright protections will long remain suitable to handle the problems of intellectual property. Today both the concept of authorship and the methods and character of communication are changing. Present confusion over the proper categorization of computer programs in the law amply testifies to these facts.⁸³ The consideration of reward and stimulation of the author’s efforts will probably remain dominant in the area of intellectual property, at least so long as copyright is one of our remaining bastions of “free enterprise.” Still, with changes in authorship and in the means of reaching the author’s public, may not the author’s rights be reevaluated with regard to the method of their protection?

As the potentialities of information systems are realized, information systems will become — and perhaps replace today’s — publishers.⁸⁴ The com-

79. See EDUCOM, *supra* note 72, at 8; J. MARKE, *supra* note 55, at 88 *et seq.*

80. Oettinger, *Senate Hearings* pt. 2, at 586.

81. Miller, *supra* note 54, at 173; Wolfe, *SCIENCE*, April 21, 1961, at 319.

82. See, e.g., Benjamin, *Computers and Copyrights*, *SCIENCE*, April 8, 1966, at 183.

83. See also *Senate Hearings* pt. 2, at 555-56.

84. J. MARKE, *supra* note 55, at 103. Entry of Xerox Corp. into the educational pub-

puter's electronic circuits and output will replace most "copies." Subscribers to information systems will replace today's book buyers. Consequently "use" and not number of copies sold will determine income for authors. It will be the computer operation that buys or pays royalties for the rights to use the author's product. The author himself will more likely be a member of a team, rather than an individual creator. As computers take over the market, present psychological associations of "pride of authorship" may lessen in importance. The author may see very few of his books, for there need be only one copy buried within the circuits of a central computer. Pride in and protection of the form and expression of a work — essentially the protected area of common law copyright — will lose stature since the work will be used piecemeal in so many cases, as abstracts or excerpts. Finally, computers themselves will claim and receive protection for original works of authorship.⁸⁵

It has been predicted that eventually "copyright protection will be of little significance to the author of scholarly works."⁸⁶ Instead, the author will protect his work by contracts with operators of information systems who will be the important disseminators of his works. Under the revision, however, the viable development of this possibility may be blocked by the dominant position of the publishers and by the exclusivity of the authors' rights, which now have given them an unassailable bargaining position. The bill will allow copyright owners to control use of their works even after they have been digested by computers that have paid for input rights. This is an extremely heavy burden to place on the infant computer technology. The protection afforded the form of expression of ideas may turn out to be at the expense of their dissemination. Though these prospects underscore the need for rapprochement between computers and copyright, the subject received short shrift from the drafters of the revision. The forces that will be involved directly in such changes are not yet sufficiently powerful, vocal, or mature to influence legislation.

Possible Solutions to the Problem of Computer Uses

Modification of Fair Use. A popular proposal is that the fair use concept be readjusted to allow more computer uses than are now contemplated as noninfringements. (In view of the advanced stage of the revision, of course, this proposal has little chance of being implemented.) At present, fair use provides for insubstantial use, certainly not for the making of a copy for computer input. A modest extension of the doctrine has been proposed by the American Bar Association's Patent, Trademark and Copyright Section, Committee No. 408, and could be adopted in the revision with little change:⁸⁷

To the extent that copyrighted material is recorded in computer readable form, and is used to generate and disseminate information

lishing field is significant, see N.Y. Times, May 22, 1965, at 35, col. 2.

85. See *House Hearings*, *supra* note 55, pt. 2, at 1149; Benjamin, *supra* note 82, at 182.

86. J. MARKE, *supra* note 55, at 103.

87. ABA SECTION OF PATENT, TRADEMARK AND COPYRIGHT LAW, COMMITTEE REPORTS 173 (1967).

in a manner which would be considered fair use if an automatic information processing system were not involved, such recording and use shall be deemed to be fair use.

This proposal would merely remove the "penalty" for computer uses that follows from the redefinition of "copies" which would include computer readable reproductions as copies.⁸⁸ Under the revision such a copy would be an infringement even though no use at all or only fair use were ever made of it by the machine. But a human making the same use of the copyrighted work would not infringe because he could read a purchased copy of the work.⁸⁹ This proposal, then, would simply enable a computer to digest material or "read" on the same legal basis as a human. Examples of such fair use given by Committee No. 408 include "the citation, indexing, abstracting, translation, and analysis of copyrighted works."⁹⁰

A slightly broader proposal regarding fair use has also been made by this American Bar Association Committee: all machine input should be deemed fair use "unless the author or copyright proprietor has copyrighted such a conversion and makes it available for information storage and retrieval use upon reasonable terms."⁹¹ This proposal thus recognizes that input in itself is actually not a "copy" in the sense that a human can read it, and that a copyright owner can only be actually harmed by the computer's output. Under this approach an author could maintain control of his work by copyrighting the right to make a machine readable copy — which in itself would seem to be a salutary recognition of the fact that a computer copy is a new breed hitherto not contemplated by copyright law. Committee No. 408 further suggests that computer output be the test of fair use, even after a work has been copyrighted against machine uses. If the output were not a fair use, then all prior steps would retroactively become infringements. The tremendous advantage for the computer operator under this proposal is, again, that he would not (in the absence of a "machine use copyright") have to pay, or fear infringement, before scanning and analyzing a copyrighted work in his machine. An infringement could occur only after the work was found useful and then used in output beyond the bounds of fair use. Copyright interests will advance the argument that under such a proposal the author loses control of his work and stands to lose the benefits of his rights. Indeed, Committee No. 304 of the ABA's Patent, Copyright and Trademark Section has answered:⁹²

[T]he complete freedom to copy for storage purposes, and the right to retrieve portions of copyrighted works without incurring liability for infringement, would of necessity impair, if not destroy completely, the benefits of copyright in the works which were used for these purposes.

88. See text following subheading *Application of the Revision's Five Rights to the Computer Cycle*.

89. See text accompanying notes 59 and 60.

90. COMMITTEE REPORTS, *supra* note 87, at 173.

91. ABA SECTION OF PATENT, TRADEMARK AND COPYRIGHT LAW, COMMITTEE REPORTS, at 150 (1966).

92. J. MARKE, *supra* note 55, at 99.

Under the instant proposal, however, the copyright holder could exact a toll for conversion into machine readable form and thus would have some control even over input. Moreover, as already pointed out, this argument is difficult to credit after repeated assurances of computer experts that their machines can easily be set to keep records of their manipulation of copyrighted works for billing purposes.⁹³

Resurrection of the Nonprofit Exemption. A more comprehensive program — at least for educational uses — has been laid out by EDUCOM, the Interuniversity Communications Council.⁹⁴ The EDUCOM resolution seeks “reasonable exemptions” from infringement for nonprofit educational, research, and library institutions that utilize copyrighted works in computers. Citing traditional copyright policy of exempting nonprofit performances of nondramatic and musical works, EDUCOM recommends that such uses continue to be exempt from infringement. The revision, it will be recalled, substitutes for the present general nonprofit exemption several specific exemptions that offer little or no encouragement to information systems. EDUCOM argues that computer input for educational purposes, as well as for performance and display output, deserves an exemption if the final uses are fair use or otherwise exempt. The organization also believes it crucial that the remedy of injunction not be available against nonprofit educational users, especially as long as no viable clearance system exists.⁹⁵ Such an exemption and anti-injunction clause, particularly if it included freedom from infringement for input purposes, would be hotly opposed by textbook publishers and authors and has very little chance of being included in the new law.

Mechanisms for Change in the Law. EDUCOM, pointing out that the revision’s drafters laid down “comprehensive restrictions on computer uses” without seriously considering the problems of computers and copyrights, also proposes creation of “appropriate administrative mechanisms” to facilitate future adjustment of copyright law. This idea is especially well-founded, not only because it is now difficult to envisage the conditions that will arise as information systems develop but also because:⁹⁶

It is hazardous to rely on the usual process of formal legislative amendment to correct abuses as they arise. . . . In the copyright field, abuses are advantages seen from the other side; they are fiercely defended by the favored groups and become extremely hard to dislodge.

93. *Senate Hearings* pt. 3, at 585; see EDUCOM, *supra* note 72, at 10.

94. EDUCOM, more fully known as the Interuniversity Communications Council, had a membership of 68 colleges and universities with 185 campuses as of March 1967. EDUCOM’s resolution containing criticisms of and suggestions for copyright law revision was passed March 15, 1967, in a meeting at Tallahassee, Florida. Subsequently this resolution was published in *Educom*, the Council’s newsletter, on April 7, 1967, and was presented before the Senate Subcommittee on Patents, Trademarks and Copyrights; see *Senate Hearings* pt. 2, at 547 *et seq.*

95. *Senate Hearings* pt. 2, at 577.

96. EDUCOM, *supra* note 72, at 11.

Two possibilities for "self-correction" of the copyright law are suggested. An administrative body with appropriate powers delegated from Congress could be authorized to amend copyright law, subject to congressional veto. In lieu of this proposal Congress could appoint an advisory council to investigate copyright problems and to make resolutions to a joint congressional committee, which would then propose legislation.⁹⁷

Any mechanism similar to these ideas would be a major improvement in an area that is explosively changing, yet has been subjected to serious congressional scrutiny only once in fifty years. In addition to (or because of) the notorious lethargy of Congress, the judiciary has had difficulty operating under antiquated copyright provisions in the face of innovations such as CATV. These proposals are bound to seem more attractive as time passes, and one of them could be enacted at a later date.

A Copyright Clearing House. Already it is said to be difficult for volume users of copyrighted works to get separate licenses from all the copyright owners whose works they wish to use. On the other hand, with the advent of the Xerox machine and the information retrieval system, few copyright owners can still control all uses of their works. Given these two problems, the reasonable solution is to establish a clearing house to stand between the owners and the consumers, which could make legal and financial arrangements between the two sides with an efficiency impossible for individuals.⁹⁸ Accordingly, the clearing house idea has been put forward in various forms by practically everyone concerned with copyright and the new technology. A "Committee To Investigate Copyright Problems Affecting Communication in Science and Education" has been studying the clearing house idea since 1959.⁹⁹ The "Authors League" favors it,¹⁰⁰ as does the American Textbook Publishers Institute.¹⁰¹ The House Report on the revision hopefully mentioned a clearing house,¹⁰² and the American Patent Law Association¹⁰³ as well as the ABA's Section of Patent, Trademark and Copyright Law¹⁰⁴ have drafted identical statements recommending a clearing house system. The only opposition to the idea has come from educators who feel they should receive specific exemptions under the revision; once the law is passed it may be presumed that this opposition will melt away. As the Committee to Investigate Copyright Problems has put it, quoting Benjamin Franklin, "We must all hang together, or assuredly, we will all hang separately."¹⁰⁵ The APLA-

97. *Senate Hearings* pt. 2, at 578.

98. Stewart, *The Clearing House System for Licenses*, 14 BULL. CREDITORS' SOCIETY 8 (1966).

99. *Senate Hearings*, pt. 1, at 108.

100. *House Hearings*, pt. 1, at 101.

101. *House Hearings*, 1431.

102. H.R. REP. No. 83, at 25.

103. ABA SECTION OF PATENT, TRADEMARK AND COPYRIGHT LAW, COMMITTEE REPORTS 105, 173 (1967).

104. APLA BULL. Sept. 1967, at 418.

105. *House Hearings* 1471. The president of the CUCP, Howard Meyerhoff, has also compared the clearing house with democracy: "[I]t may be inefficient and uneconomical, but still the best solution." *Id.* at 1476.

ABA recommendation, which is probably best suited for examination both from an objective and from a legal standpoint, suggests the following guidelines for a clearing house:¹⁰⁶

- (1). Nonexclusive licensing by a centralized clearing house of closely interrelated categories of works to be jointly operated by representatives of copyright owners, users, and possibly, of the public.
- (2). Voluntary participation with inducements to encourage participation.
- (3). Published rates providing for payment depending on type of copyrighted work and use.
- (4). Adequate provision to avoid antitrust problems, if any.
- (5). A provision by Congress in any Copyright Law revision for the establishment of an appropriately funded Commission to bring about the operation of such a centralized clearing house by July 1, 1968. The Commission shall report to Congress by such date. If such Commission is not successful, Congress shall provide a solution to the problem by way of specific legislation.

The almost urgent tone of this statement contrasts sharply with the revision's treatment of computers. Lack of the recommended Commission notwithstanding, the interested parties need only reach common ground to get such a clearing house under way.

Some broad features of a clearing house are easy to foresee; other aspects will have to be worked out in laborious negotiations. The clearing house could deal with all amenable copyright holders, or it might confine its operations to copyrights in a limited area such as science or education. It should be able to issue blanket licenses for the works in its repertory — the works to be available to all users and for all uses. Fees or rates for the uses could be worked out according to the nature of the use or the number of people having access to the work through the licensed user. Apportionment of such fees between clearing house and the copyright holder will present a thorny problem.¹⁰⁷ The clearing house would make available to its users a list of all authors and works available in its repertory. It could represent American authors and users in foreign nations to considerable advantage.

Subscribers to the system — information systems or any volume users of copyrighted materials — would be able to pay a flat rate for clearance of any work within the repertory. It does not seem likely that users would be able to pay a single fee for the use of all works licensed by the clearing house, nor that rates for all uses would be identical. Publishers, wary of another "jukebox debacle,"¹⁰⁸ are now demanding full payment and more for value received. If the system's fee scales are to be based on number of users per work, information systems would have to keep records of individual uses, which could be done with relatively slight adaptations. Licenses issued to users

106. APLA BULL. Sept. 1967, at 418.

107. Of the proverbial type.

108. Miller, *supra* note 54, at 176; Benjamin, *supra* note 82, at 183-84. The "jukebox exemption" is "the exception permitting operators of coin-operated phonographs to perform musical compositions without the consent or compensation of the author, granted in section 1 (e) of the present law." *House Hearings*, pt. 1, at 91-92.

would almost certainly not constitute the exclusive rights granted by copyrights, but would be in the nature of contract. In a word, such a system could in one operation enable authors and users to reach their respective maximum markets and sources of materials, centralize billing and collection of "royalties," and handle many of what are now infringement cases.

A number of specific problems clearly stand in the way of such broad expectations. The most often voiced objection to a clearing house is the cost of establishing and running it. The precedents of ASCAP and BMI, however, show that cost need not deter establishment of a clearing house when other conditions demand it.¹⁰⁹ A second major hurdle is that a clearing house would be unworkable unless it attracted at least a solid majority of the authors and users it set out to serve. The APLA-ABA suggestion of "inducements to encourage participation" is most appropriate, but equally vague—unless Congress is being asked to put pressure on authors and users to get together. A compulsory license has been suggested to counter the power of the copyright owner to prevent use of his work by a willing purchaser.¹¹⁰ Under a compulsory license law the author could not, once his work were published, deny its use but would be forced to accept reasonable rates for it. This concept is anathematized in many, perhaps most quarters,¹¹¹ and the APLA-ABA statement on clearing houses specifically recommends against it. But public interest in access to all sources of knowledge is certainly strong enough to make the idea worth consideration. Precedents exist in the revision in the cases of phonograph records and juke-boxes.¹¹²

There is also the question of who will run the system and with what degree of control. The ABA's Patent, Trademark and Copyright Committee No. 304 has suggested (in slight conflict with the major APLA-ABA statement) that the clearing house be controlled by copyright owners, but that its structure be worked out in negotiations with computer users.¹¹³ The antitrust implications of such a system are likely to be controversial.¹¹⁴

Many lesser but still vital details will have to be worked out before a clearing house could begin operations. What procedures would be followed

109. ASCAP distributes all its collections to its members except operating costs running "under 18 per cent," according to testimony given before the House Revision Subcommittee, *House Hearings*, pt. 1, at 191. BMI distributes to its members "a little over 75 per cent," according to testimony in *House Hearings* at 213, pt. 1, at 213.

110. Miller, *supra* note 54, at 176.

111. Kastenmeier, *The Information on Explosion and Copyright Law Revision*, 14 BULL. CREDITORS' SOCIETY 198 (1967).

112. Proposed Revision, §§115 (a), 116 (a) (2).

113. ABA SECTION OF PATENT, TRADEMARK AND COPYRIGHT LAW, COMMITTEE REPORTS 110 (1967).

114. The Federal Communications Commission inaugurated an investigation of the data processing industry in November 1966, with an eye to the growing convergence of computers and the already-regulated communications utility. As information systems begin to build continental exchange ability, whether tying in with established communications systems or developing their own resources, probably making use of satellites, attention on the "computer utility" will increase. See Irwin, *The Computer Utility: Competition or Regulation?*, 76 YALE L.J. 1299 (1967); for comments on a possible educational computer network, perhaps to tie in with AT&T and/or Western Union, see *Senate Hearings*, pt. 2, at 552. See also Miller, *supra* note 54, at 177.

by users of the system and what safety checks would be employed to ensure proper reporting? Will nonprofit organizations be charged lower rates than commercial users? How will the total collections of the clearing house be apportioned between, for instance, well-known and unknown authors? What kind of appeal mechanism will be set up? These and many other murky problems point up a severe need for research in a number of directions before clearing house negotiations can even begin.

This need for research is all the more drastic in light of the committee hearings, which preceded the reporting of the revision. The hearings involved little serious investigation into problem areas; yet they provided a setting in which the two sides fenced testily without developing a meaningful dialogue.¹¹⁵ This atmosphere must change if negotiations for a realistic solution are to be successful.¹¹⁶

A belated sign of congressional interest in research of this type was shown by the introduction of Senate bill No. 2216 by Senator John McClellan (Chairman of the Senate Subcommittee on Patents, Trademarks and Copyrights) in August 1967. This bill will establish in the Library of Congress a National Commission on New Technological Uses of Copyrighted Works. The commission will compile data on the use of copyrighted works (1) in information storage and retrieval systems and (2) by various forms of machine reproduction.¹¹⁷

CONCLUSION

The outstanding certainty in the area of computers and copyright is change — constant, rapid, and substantial. Almost as striking is the present lack of preparedness, even a seeming unwillingness, to meet the new and vitally important problems in the area. It is true that the revision removes a number of obstacles to effective legal protection for computer programs. If the revision passes, the program author will at least be assured of a viable alternative to the trade secret law. However, with regard to computer uses of copyrighted works, it seems that the forthcoming law will incubate the present embryo of crisis for educational users. This crisis — as yet, perhaps, only potential — must be met as soon as possible, and it does not seem at all certain that traditional copyright concepts can provide adequate answers. It is to be hoped, therefore, that Revision Committee Chairman Robert Kastenmeier was actually understating matters greatly when he said: "It is my hope and expectation that Congress will not wait another 57 years before providing a foundation in law for developments in this field [of computers]."¹¹⁸

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115. See, e.g., *House Hearings* pt. 1, at 363.

116. Miller, *supra* note 54, at 167.

117. Miller, *supra* note 54, at 175.

118. APLA BULL. Sept. 1967, at 425.