

UNITED STATES COURT OF APPEALS

NINTH CIRCUIT

No. 92-15655
(N.D. Cal. No. C-91-3871 BAC)

SEGA ENTERPRISES LTD., a Japanese
corporation,

Appellee-Plaintiff,

v.

ACCOLADE, INC., a California
corporation

Appellant-Defendant.

ACCOLADE, INC., a California
corporation,

Appellant-
Counterclaimant,

v.

SEGA ENTERPRISES LTD., a Japanese
corporation, and SEGA of AMERICA,
INC.,

Appellees-
Counterdefendants.

BRIEF AMICUS CURIAE OF
COMPUTER & COMMUNICATIONS
INDUSTRY ASSOCIATION

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INTEREST OF AMICUS CURIAE COMPUTER &
COMMUNICATIONS INDUSTRY ASSOCIATION

The Computer & Communications Industry Association ("CCIA") is comprised of some 50 member companies who are manufacturers and/or providers of computer, information processing, and telecommunications products and services. CCIA's members include providers of computer hardware and software. CCIA's member companies are drawn from virtually every sector of the computer and communications industry and range in size from small, entrepreneurial firms to many of the largest in the industry. Collectively, CCIA's members generate annual revenues in excess of \$165 billion and employ well over a million people.

As such, CCIA has a significant interest in the law of intellectual property, particularly that of copyright law as it pertains to computer programs. For example, the district court makes reference in its Order to the Semiconductor Chip Protection Act and makes certain improper inferences which impact the court's interpretation of copyright law. See Order, at 10-11. CCIA's then President, A.G.W. Biddle, on May 19, 1983 testified on the proposed bill (S. 1201) to which the court makes reference, said bill being a proposal to amend the Copyright Act which was never enacted into law.

CCIA recognizes and respects the Constitutional right authors have under Article I, §8, of the United States Constitution to secure for limited times the exclusive right to their writings. Indeed, its member companies rely on copyright law to protect their intellectual property rights in writings, specifically their

interests in securing for limited times exclusive rights to the computer programs which they have created or written. Yet, CCIA recognizes that this right is limited and reflects a balance of competing public interests: creative work is to be encouraged, rewarded and protected to the extent permitted under the Copyright Act; but private investigation must serve the cause of promoting broad public availability and compatibility of computer hardware with computer programs or software written by computer manufacturers and software providers. See Twentieth Century Music v. Aiken, 422 U.S. 151, 156 (1975), quoted with approval in Harper & Row, Publishers, Inc. v. Nation Enters., 471 U.S. 539, 558 (1985); Sony Corp. v. Universal City Studios, 464 U.S. 417, 431-32 (1984). As the Supreme Court stated recently in Feist Publications v. Rural Telephone Service Co., 111 S.C. 1282 (1991):

The primary objective of copyright is not to reward the labor of authors, but '[t]o promote the Progress of Science and useful Arts.' [U.S. Const.] Art. I, §8, cl. 8. To this end, copyright assures authors the right to their original expression, but encourages others to build freely upon the ideas and information conveyed by a work (Emphasis added).

Id., at 1290.

CCIA respectfully submits that the Copyright Act does not prohibit public access to the copyrighted object code of a computer program by the process of disassembly to abstract the ideas and function of the program. Disassembly is an industry-wide technique for ascertaining the functionality of code in a computer specifically for identifying its method of operation which permits

compatibility or interoperability of computer software with the computer itself.

This appeal is from the Order Granting Preliminary Injunction of the district court, Northern District of California, filed April 13, 1992. CCIA is concerned that the rulings of the district court have undermined the balanced public interest served by the copyright laws and erroneously accepted the wrongful legal assertions advanced by the plaintiff SEGA Enterprises, Ltd. to the detriment of the public. First, while the district court recognizes that the public may reverse engineer a copyrighted computer program in order to determine how the program works, the court has arbitrarily found that disassembly of the program's object code is an illegal form of reverse engineering. Yet, the Court approves of alternative methods of reverse engineering computer programs that yield similar functional information, namely, (1) "peeling" the microchips or (2) programming in a "clean room." Order, at 11.

Secondly, the district court clearly erred in failing even to consider whether or not Accolade's final video game works are substantially similar to Sega's video game works. In order to find copyright infringement, the court must have inquired and found that there was a substantial similarity of idea and expression between Sega's copyrighted works and Accolade's works. See Data East USA, Inc. v. Epyx, Inc., 862 F.2d 204 (9th Cir. 1988); Berkic v. Crichton, 761 F.2d 1289 (9th Cir. 1985).

A final work may be dissimilar to Sega's own copyrighted video

game works, and not be infringing; yet, may have a functional code derived by the process of disassembling code from the Sega game cartridges in order to operate with the Sega Genesis console. Such is the present case. See Plaintiff's Memorandum in Support of Motion for Preliminary Injunction, at 12. Compatibility of computer software and hardware depends on the public availability of functional code which constitutes the method of operating video games or software with a game console or computer, respectively.

Thirdly, the district court clearly erred in finding that such disassembly of code is illegal intermediate copying or an illegal derivative work. Such disassembly produced assembly language which identifies the set of instructions or the method of operation. See Order, at 5. Under 17 U.S.C. § 102 (b), in no case does copyright protection extend to method of operations.

Thus, it is clear error for the district court to have extended Sega's copyright on its object code to include the method of operation embodied in the assembly language resulting from Accolade's disassembly process.

ARGUMENT

I. The District Court Has Erred In Extending Copyright Protection To Idea and Method of Operation In Contravention of 17 U.S.C. §102(b)

The district court has clearly erred in finding that defendant Accolade has improperly reverse engineered the object code in Sega's copyrighted game programs. Accolade used an industry-wide process of disassembling Sega's object code (in order to abstract ideas and functionality) such that Accolade's own game programs could run on Sega's video game console. Historically, Accolade and other developers of video games and programs or software have generally been able to write program code compatible with personal computers from publicly-available, published materials regarding the operating system of the computer upon which the computer program or video game software is designed to run.

However, in the present case Sega has chosen not to publish comparable materials regarding the video display computer or "microprocessor which operates the Genesis video game console and which would enable a developer such as Accolade to create compatible software." (Emphasis added). Plaintiff's Memorandum in Support of Motion for Preliminary Injunction ("Memorandum in Support"), at 4. Beginning in 1989, after negotiations for a license from Sega that did not result in an agreement, Accolade began reverse engineering the Genesis console "so that Accolade could make games which would play on it." Corrected Opposition of Accolade to Sega's Motion for Preliminary Injunction

("Opposition"), at 5.

The record on appeal does not show or evidence at all that there is a substantial similarity between Accolade's final product or work and that of plaintiff Sega. As will be discussed more fully below, the court rejected Accolade's argument that Sega must establish substantial similarity between Accolade's final product and plaintiff's final product. Order, at 6. In fact, the total amount of code replicated in Accolade's game cartridges amounted to approximately 20 bytes (characters) of code, out of the 500,000 to 1.5 million bytes of code in Accolade's game cartridges. Miller Decl., par. 3. Less than one-hundredth of one percent (.01%) of the replicated code is identical. Wilson Decl., par. 6, 9. Accolade's intent and objective was to determine the few lines of code that might be functional, i.e., essential to the operation of cartridges on the modified Genesis console.¹

Also, Accolade "disassembled" Sega's object code to understand the ideas, function and operation of programs which are to run directly on the Sega video game console. Memorandum in Support, at 4 and 5. As Accolade's President, Alan Miller explained:

"I understand there can be some confusion about the word disassemble. It's a special word used in computer software, which means to take the ones and zeros that are the resulting object code that the microprocessor runs

¹ While there is no record that Accolade's video games are substantially similar to Sega's video games, without any record or foundation, Sega asserts "SEL believes it can prove similarity, if necessary." Memorandum in Support, at 21, fn. 13. Sega should have made a record if it had one to make.

directly, put that into a commercially available program called a disassembler, which yields as an output what is called assembly language program. It makes it more easy to understand what's going on in the program.

Miller Depo. 29-30.

Accolade obtained a few of Sega's publicly-available game cartridges lawfully by purchasing them on the open market. Through the disassembly process, Accolade created a human-readable assembly language version of the object code which itself is in the form of ones and zeros, which is referred to as machine language or binary code. Because it is impractical to work with binary code, Accolade disassembled "Sega's machine readable object code into assembly language code which humans can understand." Memorandum in Support, at 5-6.

Sega argued to the court that Accolade illegally wrote "input/output routines," based upon what was "extracted from the 'enhanced' assembly programs derived from SEL's copyrighted object code," that were used by Accolade in developing its Genesis compatible games. Memorandum in Support, at 7. Accolade states that its disassembly of Sega's object code was only for the purpose of achieving compatibility with the Genesis console and that it only replicated a minimum amount of functional code in its video game cartridges "essential to the operation of cartridges on the modified Genesis console." Opposition, at 6. Sega admits that Accolade's use of disassembly for reverse engineering Sega's games was for the purpose of achieving compatibility with the Sega Genesis game console. Memorandum in Support, at 4. But Accolade

specifically denies that it incorporated "input/output routines" acquired in the reverse engineering process into its own game cartridges or based its own programs on Sega's game cartridges. Opposition, at 9. The court totally ignores this important fact issue of whether or not the Sega code disassembled or used by Accolade was merely functional and representative of the method of operation of compatible video game cartridges on the Sega console. The court's omission is clear error.

Not all writings are the subject of copyright. The United States Supreme Court, in Baker v. Selden, 101 U.S. 99 (1879), found that plaintiff's copyright in an account book did not extend to cover the accounting system described in the book. Rather, since the system is open to public use, "the methods of an art are the common property of the whole world." Id. There was no question in Baker that the defendant made and used plaintiff's account-books arranged on substantially the same system, yet the Supreme Court found that defendant did not violate the copyright of plaintiff's book. Plaintiff did not by copyright secure the exclusive right to the use of the system or method of bookkeeping. There is a clear distinction between the protected book and the art not covered by copyright, which the book is intended to illustrate. Likewise, in the present case, plaintiff Sega is wrongly attempting to assert, by its copyright in its game programs, an exclusive right in the entire video game system and the method by which video game cartridges operate with the Genesis game console.

Perhaps, patent protection of the game system may have been

possible, but Sega's video games and game console are not protected by patent. Nevertheless, Sega seeks patent-like protection over the ideas, function, and method of operation of the game cartridges with its Genesis console. As the Supreme Court stated in Baker:

to give the author ... an exclusive property in the art ..., would be a surprise and a fraud upon the public. That is the province of letters-patent, not of copyright."

Id., at 102.

In a landmark patent law case, Kewanee Oil Company v. Bicron Corporation, 94 S.Ct. 1879 (1974), the U.S. Supreme Court stated that only inventions, which are novel, useful and nonobvious and which meet the standards of patentability, are "the things which are worth to the public the embarrassment of an exclusive patent." Id., at 1890 (quoting Thomas Jefferson). "Federal law requires that all ideas in general circulation be dedicated to the common good unless they are protected by a valid patent." Id., at 1886 (quoting Lear, Inc. v. Adkins, 395 U.S., at 668); see also Bonito Boats, Inc. v. Thunder Craft Boats, Inc., 489 U.S. 141, 148 (1989). For this reason, copyright law cannot be extended to cover ideas and subject matter not entitled to exclusive protection. The Supreme Court in Kewanee recognized that reverse engineering is a "fair and honest" means of discovery "by starting with the known product and working backward to divine the process which aided in its development and manufacture." Id., at 1883.

In considering the extent and limit of copyright protection, in Sony Corp. v. Universal City Studios, 464 U.S. 417 (1984), the

U.S. Supreme Court stated that copyright protection has never accorded an author complete control over all possible uses of his work. Indeed, despite the limitations of copyright, there is a "natural tendency of legal rights to express themselves in absolute terms to the exclusion of all else." Id., at 433, fn. 13. In the present case, the court errs in applying Section 106 of the Copyright Act absolutely, without any regard to the limited nature of copyright and the limited scope of the copyright holder's limited monopoly. First, the court fails to consider whether or not any or all of the assembly language material resulting from Accolade's reverse engineering of Sega's object code is protectable by copyright. Under Section 102(b) of the Act, copyright protection expressly does not "extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work." (Emphasis added) 17 U.S.C. §102(b). Yet, the court ignored the fact that Accolade reverse engineered by disassembling code to divine the process or method of operation of the Sega game system, namely, how the video game cartridges operate with the game console. Thus, Sega's copyright protection for its object code does not extend to the functional assembly language matter which resulted from Accolade's reverse engineering.

The district court improperly expanded and extended Sega's copyright despite the caution urged by the U.S. Supreme Court in Sony Corp. v. Universal City Studios, supra:

Sound policy, as well as history, supports our consistent deference to Congress when major technological innovations alter the market for copyrighted materials. Congress has the constitutional authority and the institutional ability to accommodate fully the varied permutations of competing interests that are inevitably implicated by such new technology.

Id., at 431.

. . . .

The limited scope of the copyright holder's statutory monopoly, like the limited copyright duration required by the Constitution, reflects a balance of competing claims upon the public interest: Creative work is to be encouraged and rewarded, but private motivation must ultimately serve the cause of promoting broad public availability of literature, music, and the other arts.

Id., at 431-432 (citing Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 156 (1975)).

Rather than follow the Supreme Court's restraint in Sony Corp. against extending copyright protection, the district court improperly misapplies Sony Corp. to support an unjustified expansion of Sega's copyright to give Sega monopoly protection over its entire video game system by preventing compatible game programs from being developed for the Genesis console. See Order, at 14. In Sony Corp., the Supreme Court refused to extend copyright protection on television programs to prohibit the public's recording of the broadcasts of the copyrighted programs with video tape recorders for later viewing. While the burden of proof is on the copyright holder to show that the prohibition is clearly stated in the Copyright Act, the district court clearly erred in shifting

the burden to apply the prohibition and injunction against Accolade's use. The Copyright Act does not prohibit reverse engineering by disassembling copyrighted object code into functional assembly language for the purpose of achieving compatibility or interoperability with computers or game consoles which are available to the public.

As Sony failed in its attempt to extend the copyright law to serve its commercial interest, so has Sega failed to make its case that disassembly is prohibited by the Copyright Act. Sega has not met its burden because "one may search in vain for any sign" that Congress has made it unlawful or enacted a flat prohibition against disassembling object code to read and understand a copyrighted computer program. Sony Corp., supra, at 456. Likewise, the district court erred in finding such a prohibition when there is none in the Copyright Act.

In commenting on Section 102 of the Copyright Act, the House Committee on the Judiciary made clear that copyright does not preclude others from using the ideas or information revealed by the author's work, and that the purpose of Section 102(b) is to restate that the basic dichotomy between expression and idea remains unchanged. In particular with respect to computer programs, the Committee noted

Some concern has been expressed lest copyright in computer programs should extend protection to the methodology or processes adopted by the programmer, rather than merely to the "writing" expressing his ideas. Section 102(b) [subsec. (b) of this section] is intended, among other things, to make clear that the

expression adopted by the programmer is the copyrightable element in a computer program, and that the actual processes or methods embodied in the program are not within the scope of the copyright law.

Notes of Committee on the Judiciary, House Report No. 94-1476.

The distinction between ideas and expression is intended to prohibit the copyright holder from monopolizing an idea when there are a limited number of ways to express that idea. Apple Computer, Inc. v. Formula International, Inc., 725 F.2d 521, 525 (9th Cir. 1984). The National Commission on New Technological Uses of Copyrighted Works (CONTU), established by Congress in 1974, considered the extent to which computer programs would be protected by copyright law. While the CONTU Final Report recommended that the copyright law be amended to make it explicit that computer programs are the proper subject of copyright, copyright protection over computer programs are not unlimited:

The "idea-expression identity" exception provides that copyrighted language may be copied without infringing when there is but a limited number of ways to express a given idea. This rule is the logical extension of the fundamental principle that copyright cannot protect ideas. In the computer context this means that when specific instructions, even though previously copyrighted, are the only and essential means of accomplishing a given task, their later use by another will not amount to an infringement.

CONTU Report at 20.

The limitations of a copyright on computer programs was examined by the court in Synercom Tech. v. University Computing

Co., 462 F.Supp. 1003 (N.D. Tex. 1978). The court considered whether or not the sequence and ordering of data in plaintiff's input formats contained protectable subject matter. As is true in the present case, where Accolade requires functional input code derived from Sega's object code to achieve compatibility with the Genesis console, in Synercom the court found that "[i]n using a program one must have a format for input so that the input of data and the instruction to the computer are compatible with its program. Id. at 1005. Although, as in the present case, plaintiff argued that the order and sequence of data was the expression, not the idea, the court rejected plaintiff's argument and ruled that the ordering and sequence of data in plaintiff's input formats contained no protectable subject matter because the "form, arrangement, and combination is in itself the intellectual conception involved. It would follow that only to the extent the expressions involve stylistic creativity above and beyond the bare expression of sequence and arrangement, should they be protected." Id., at 1014.

Thus, the district court clearly erred in failing to consider whether or not the functional assembly language disassembled from Sega's object code contained protectable subject matter. In view of the above, it is respectfully submitted that the assembly language material used by Accolade to make its video games compatible with the Genesis console does not contain protectable subject matter.

II. The District Court Erred In Failing to Consider
Whether or Not Accolade's Video Games Are
Substantially Similar to Sega's Video Games

In order to find copyright infringement, the district court must have inquired and found that there was a substantial similarity of idea and expression between Sega's copyrighted works and Accolade's works. To establish a successful copyright claim, a plaintiff must show: (1) his ownership of the copyright; (2) the defendant's access to his work; and (3) "substantial similarity" between the defendant's work and his own. See Berkic, supra, 1291-92; Sid & Marty Krofft Television Productions, Inc. v. McDonald's Corp., 562 F.2d 1157, 1162 (9th Cir. 1977).

Moreover, an evaluation of whether respective works are substantially similar "should occur after unprotectable elements of expression have been identified and excluded from consideration." Apple Computer, Inc. v. Microsoft Corp., 759 F.Supp. 1444, 1449, fn. 8 (N.D. Cal. 1991). See Data East USA, Inc. v. Epyx, Inc., supra, at 208 (9th Cir. 1988); Berkic v. Crichton, supra. In failing to do so, the court clearly erred.

Yet, the court rejected out-of-hand Accolade's argument that Sega must establish substantial similarity between Accolade's final product and plaintiff's work. Order, at 6, citing Walt Disney Productions v. Filmation Associates, 628 F.Supp. 871, 876 (C.D. Cal. 1986). The court's reliance upon Walt Disney Productions is misplaced. In Walt Disney Productions, the district court could not compare the competitor's final film with Disney's copyrighted materials because it was not yet completed. At the time, however,

there was a substantial body of work generated by the defendant competitor existing preliminary to a "finished film". Id., at 875. The court in fact considered whether the competitor's existing work was not substantially similar as a matter of law, as claimed in defendant's motion for summary judgment. Id., at 877.

The district court in Walt Disney Productions stated the law clearly:

In order to establish copyright infringement, a plaintiff must prove ownership of the copyright and "copying" by the defendant. "Copying" is proved by evidence that the defendant had access to the copyrighted work and that his work bears a "substantial similarity" to plaintiff's. Sid & Marty Krofft Television Productions, Inc. v. McDonald's Corp., 562 F.2d 1157, 1162 (9th Cir. 1977). In turn, the determination of similarity of expressions like the ones here in controversy involves two steps: first, whether there is substantial similarity in ideas (the "extrinsic test"); second, whether there is substantial similarity between the expressions (the "intrinsic test"). Krofft, 562 F.2d at 1162.

Id. (Emphasis added).

In applying the Krofft test, the court denied defendant's motion because none of defendant's depictions involved were so different that no reasonable viewer could find substantial similarity. Id., at 879; See v. Duranq, 711 F.2d 141, 143 (9th Cir. 1983).

Yet, in the present case, the district court failed to make any determination whether or not Accolade's final work, which was available for comparison, was substantially similar to Sega's

copyrighted work. Instead, the court only looked at Accolade's process of reverse engineering, which generated assembly language not used in its final work, but which was required to determine how its video game cartridges could operate on Sega's video display console. CCIA discusses below the court's erroneous finding that Accolade's disassembly of Sega's object code involved illegal, intermediate copying.

III. The District Court Has Erred in Finding That
Accolade Has Infringed Sega's Copyright By Its
Means of Reverse Engineering

A. Accolade's Reverse Engineering Was Proper

As the district court has noted, Sega does not contend "that reverse engineering is itself improper. Rather, the issue is whether the means employed infringed SEL's copyright." Order, at 5. There is no dispute that Accolade reverse engineered the video display microprocessor in the Genesis console by disassembling the code in Sega's game cartridge's so that it could develop and market Genesis-compatible video games. Id., at 2. The court found that Accolade's means of reverse engineering constituted copyright infringement because Accolade made intermediate copies of the derivative material and "embellished" it. Id., at 5. The court has erred in so finding infringement because the so-called "derivative" material resulting from disassembly of object code is not a prohibited "derivative work" under 17 U.S.C. §§101 and 106.

It is clear that Accolade neither has made a "translation" of Sega's video games, nor has offered a translation of Sega's games

commercially. Certainly, Accolade has not "recast, transformed, or adapted" Sega's games and offered them commercially as their own. 17 U.S.C. 101. The court in finding infringement simply concludes, without foundation, that Accolade's means of reverse engineering involves infringing intermediate copies of derivative works based on Sega's copyrighted works. Moreover, court's reliance on SAS Institute, Inc. v. S&H Computer Systems, Inc., 605 F.Supp. 816 (M.D. Tenn. 1985), is misplaced.

In SAS Institute, the court considered whether or not defendant S&H made a number of unauthorized, and thus infringing, exact copies of SAS source code and whether or not the S&H product itself is either a copy, or a "derivative work", making it in either case an infringing work. It was undisputed that defendant made an unauthorized use of the SAS program in the preparation of its own S&H product. The court found as a matter of fact that the product was substantially and pervasively "based upon" the SAS program and that "the expression, and not merely the ideas, of SAS was duplicated [in the final S&H product]." Id. at 128-130. Thus, the court concluded that defendants' final S&H product constituted a derivative work and infringed plaintiff's copyright.

In the present case, Accolade did not make an unauthorized use of Sega's program. Further, since the court did not compare the Accolade works with Sega's copyrighted works, it could not conclude that Accolade's works were infringing derivative works. Moreover, the court in SAS Institute recognized that "one is always free to make the machine do the same thing as it would if it had the

copyrighted work placed on it, but only by one's own creative effort rather than by piracy." Id., at 829, citing CONTU Final Report. In the present case, Accolade did nothing illegal, but only used an acceptable, industry-wide practice of reverse engineering that revealed the functionality of Sega's object code, which otherwise cannot practically be read or understood since it is a machine code. By its disassembly of the object code which it never substantially used in the final product, Accolade could understand how the Sega game cartridges worked with the Genesis console and develop and market its own Genesis-compatible video games. Order, at 2.

For this reason, the other cases cited by the court do not support the court's reasoning. In Atari Games Corp. v. Nintendo of America, Inc., 18 U.S.P.Q.2d 1935 (N.D. Cal. 1991), Atari wrongfully obtained Nintendo's copyrighted program from the copyright office and copied code in its final program that "went beyond any legitimate understanding of the functionality of the program." Atari, supra, at 1936. Atari was found to be infringing Nintendo's copyright because it admittedly copied "more than was needed to make a game work on the NES console." Id., at 1940. In Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240, 1253 (3rd Cir. 1983), cert. dismissed, 464 U.S. 1033 (1984), the defendant was involved in the wholesale copying of nonfunctional programs stored in ROMs and on floppy disks (1,000 lines of code). In Hubco Data Products Corp. v. Management Assistance, Inc., 319 U.S.P.Q. 450 (D. Idaho 1983), Hubco made infringing copies of MAI's

object code and sold them to MAI computer owners. Id., at 455.

Also, the court's analysis and application of Walker v. University Books, Inc., 602 F.2d 859 (1979), is not persuasive. The Ninth Circuit in Walker found that defendant made unauthorized copies of plaintiff's copyrighted "I Ching" fortune-telling cards by making blueprints for a final product which was to be marketed commercially. The court's holding was "limited in scope" and reversed the district court only as to its ruling as a matter of law that the blueprints themselves could not amount to a "tangible reproduction" of plaintiff's work. Rather, the blueprints were "an inchoate representation of some final product which could infringe plaintiff's protected work." The Ninth Circuit did not reach the issue of substantial similarity because it is a question reserved for the trier of fact on remand.

The Court in Walker, did nevertheless state that:

Appellant, in order to establish a prima facie case, must demonstrate only that the Appellees had access to her work (here conceded) and that there exists substantial similarity between their work and her own. Herbert Rosenthal Jewelry Corp. v. Kalpakian, 446 F.2d 738 (9th Cir. 1971).

Id., at 864.

The court in the present case has erred because it did not so require plaintiff Sega to establish a prima facie case, and rejected Accolade's argument that Sega must establish substantial similarity between Accolade's work and Sega's copyrighted work.

Furthermore, the district court ignored, as not compelling,

the court's ruling in NEC Corp. v. Intel Corp., 10 U.S.P.Q. 1177 (N.D. Cal. 1989). Yet, NEC's programmer had, previous to writing NEC's final code, reverse engineered Intel's microcode by having disassembled the code into assembly language. Id., at 1184. Such disassembly of code, as in the present case, was found by the court to be permissible and not infringing because the experience yields expertise and knowledge of how to create instructions and a source of ideas in preparing one's own code. The court did not find infringement of Intel's copyright because the final version of NEC's code was not substantially similar to Intel's copyrighted code. This decision also raises the issue of substantial similarity which is necessary in order to make a prima facie case of infringement. Id., at 1183. The district court properly considered this issue and concluded that "the NEC microcode (Rev. 2), when considered as a whole, is not substantially similar to the Intel microcode within the meaning of the copyright laws." Id.

The decision in NEC Corp. also raises another issue not considered by the district court, the doctrine of "merger," which applies when the "idea" and its "expression" are inseparable to preclude a finding of substantial similarity, and thus forestalls a finding of infringement. Id., at 1179; Herbert Rosenthal Jewelry Corp., supra, at 742; Data East USA, Inc. v. Epxy, Inc., supra, at 209; Krofft, supra, at 1168. In the present case, there is a merger of idea and expression because the disassembly of Sega's code by Accolade was to discern the operation of the game cartridge with the Genesis console and abstract its functionality so that the

Accolade games would be compatible and/or interoperable with the Genesis console. The total amount of code replicated for this purpose in Accolade's game cartridges amounted to no more than 1/100 of 1% of the total amount of code in Accolade's game cartridges. Since only the functional code was used by Accolade, the "expression" and "idea" are inseparable and the merger doctrine precludes a finding of infringement.

3. Fair Use Doctrine

The district court errs in finding infringement in Accolade's means of reverse engineering by disassembling Sega's object code and using the resulting assembly language to develop its Genesis-compatible video game cartridges. While the district court recognizes that one may reverse engineer a copyrighted program in order to determine how the program works, the court has arbitrarily found that disassembly of the program's object code is not fair use. Yet, the court approves of alternative means of reverse engineering, such as "peeling" the microchip or programming in a clean room. Order, at 11.

Fair use is a privilege against a direct infringement claim. 17 U.S.C. §107. In 1976 Congress codified the common law doctrine of fair use "to restate the present judicial doctrine of fair use, not to change, narrow or enlarge in any way." H.R. Rep. No. 94-1476, reprinted in 1976 U.S. Code Cong. & Admin. News, at 5680. Congress had "no disposition to freeze the doctrine in the statute, especially during a period of rapid technological change." Id.

Section 107 enumerates four non-exclusive "factors to be

considered" in assessing fair use; they are intended to guide but not to limit analysis. H.R. Rep. No. 94-1476 at 5680; see also Harper & Row Publishers, 471 U.S. at 539, 560 (1985) (four factors "not meant to be exclusive"); Lewis Galoob Toys Inc. v. Nintendo of America Inc., 20 U.S.P.Q. 2d 1662, 1668 (N.D. Cal. 1991). 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.

17 U.S.C. §107.

While Accolade's objective is to develop compatible video game cartridges for the commercial market, the use of reverse engineering to promote compatibility and interoperability of programs with computers or video game consoles is not commercial use as such, but an engineering process which permits Sega's machine-readable object code to be read and its functional elements to be understood. Since there is no showing that Accolade's game cartridges are substantially similar to Sega's copyrighted work,

the court cannot conclude that Accolade, in offering its video game cartridges commercially, is making a commercial use of Sega's copyrighted works. Therefore, the court errs in concluding that Accolade's means of reverse engineering is not "fair use." Order, at 9.

It is intriguing that the court relies on Sony Corp., supra. In Sony Corp., the Supreme Court found that "home use" recording was "fair use" and that owners of copyrights on television programs failed to demonstrate that their use would cause any likelihood of nonminimal harm to the market for their copyrighted works. The U.S. Supreme Court in reversing the Ninth Circuit Court stated:

Even unauthorized uses of a copyrighted work are not necessarily infringing. An unlicensed use of the copyright is not an infringement unless it conflicts with one of the specific exclusive rights conferred by the copyright statute. Twentieth Century Music Corp. v. Aiken, 422 U.S., at 154-155, 95 S.Ct., at 2043. Moreover, the definition of exclusive rights in § 106 of the present Act is prefaced by the words "subject to sections 107 through 118." Those sections describe a variety of uses of copyrighted material that "are not infringements of copyright" notwithstanding the provisions of section 106." The most pertinent in this case is § 107, the legislative endorsement of the doctrine of "fair use."

Id. at 447.

As the Supreme Court made clear, a court under § 107 is to apply an "equitable rule of reason" analysis to particular claims of infringement. No generally applicable definition of the concept

is possible, and each case raising the question must be decided on its own facts. Id., at 448, fn. 31.

As in Sony Corp., Sega has not met its burden with respect to Accolade's means of reverse engineering. All disassembly accomplished for Accolade was to ensure that its own video game cartridges are compatible with the Genesis console and that Sega does not unlawfully extend its copyright on its object code to monopolize access to its console which has been offered to the public. If Sega were allowed to do so, it would have a de facto patent over a bundled system of both video cartridges and the Genesis game console to the detriment of competition and freedom of choice to the public consumer and user of video game consoles. Given the balance of public interests, Sega has not shown that Accolade's particular reverse engineering use is harmful, or that it would adversely affect the potential market for its copyrighted video games. Id., at 451.

Moreover, the court errs in concluding that the "disassembled code" derived from Sega's object code is an "unpublished" work, and subject to a narrower scope of fair use. Order, at 10, citing Harper & Row, 471 U.S. 539, 554, 564 (1985). Since Sega's object code has been offered for sale to the public, it is available for disassembly into assembly language which can then be read by the public so that the ideas behind the object code may be devined. See Kewanee Oil, supra; Bonito Boats, supra; Feist, supra.

The district court, N.D. California, in Lewis Galoob Toys, Inc. v. Nintendo of America Inc., supra, recently considered

whether or not defendant's "Game Genie" video game enhancer is a derivative work and, if a derivative work, whether its use would constitute fair use. The court found that the "shield of fair use is available" since its use is for private home enjoyment, and video games are published, not unpublished, works. Id. at 1672-73. A game owner who has fairly acquired a Nintendo game has a right to use the entire work. Id., at 1669. Likewise, Accolade as a purchaser of a Sega game cartridge, had the right to disassemble the object code to discern the ideas behind the code.

The district court also errs by attempting to read a Congressional intent into the Copyright Act from a wrongful interpretation of the Semiconductor Chip Protection Act ("SCPA" or "Semiconductor Act"). The court states: "The Copyright Act does not provide an exception for intermediate copying of software for the purpose of reverse engineering. If Congress intended such an exception, it would have provided for it as it did in the Semiconductor Chip Protection Act." Order, at 10-11. This reasoning of the court is a non-sequitur. The SCPA was enacted by Congress as sui generis legislation, independent and separate from the Copyright Act to grant protection to utilitarian semiconductor mask works not otherwise protected by copyright law. Congress intended that the provisions of the Semiconductor Act be separate and independent from the Copyright Act to avoid confusion, uncertainty in, and distortion of existing copyright law. House Report 98-781, Committee on the Judiciary, at 159, 524 (May 15, 1984). By its improper inference of Congressional intent from the Semiconductor

Act, the court has distorted existing copyright law, which Congress sought to prevent by enacting sui generis protection for mask works as a separate chapter to Title 17.

The court makes reference to an exception to liability in the SCPA for reverse engineering mask works. It does not follow, as the court asserts, that because reverse engineering is codified in the SCPA, it would be so codified in the Copyright Act if Congress intended such an exception. In providing for "reverse engineering" in Section 906 of the SCPA, congress was only codifying the established industry practice of reverse engineering. House Report, supra, at 535. It was necessary for Congress to provide an express exception for reverse engineering to liability under the Semiconductor Act because congress was creating an extraordinary protection expressly for mask chips. Thereby, Congress has preserved the balance of public interests "for the purpose of teaching, analyzing, or evaluating the concepts or techniques embodied in the mask work or the circuitry or organization of components used in the mask work." Id. Based on the testimony of industry representatives, Congress found that

it is an established industry practice to similarly make photo-reproductions of the mask work in order to analyze the existing chip so as to design a second chip with the same electrical and physical performance characteristics as the existing chip (so-called "form, fit and function" compatibility), and that this practice fosters fair competition and provides a frequently needed "second source" for chip products, it is the intent of the Committee to permit such reproduction by competitors where such reproduction is "solely for the purpose of

teaching, analyzing, or evaluating" the concepts, techniques, etc. embodied in the work, rather than mere wholesale appropriation of the work and investment in the creation of the first chip.

House Report, at 536.

The House Committee on the Judiciary did take note that legitimate reverse engineering involved intermediate copying, i.e., a "paper trail" from computer simulations. House Report, at 535, fn. 42. Thus, Accolade's disassembly of Sega's object code, which left a "paper trail" of assembly language, is consistent with the practices of legitimate reverse engineering. Also, Accolade's intermediate copying of the results of its reverse engineering evidences legitimate reverse engineering, rather than copyright infringement, that distinguishes it from mere piracy. Id.

The court also improperly found that

Congress was concerned that "to call reverse engineering [of semiconductor chips] a form of fair use under Section 107 of the Copyright Act might encourage a more expansive interpretation of this limitation on exclusive rights in the case of literary works." 130 Cong. Rec. S. 5836 (May 16, 1984) (Sen. Mathias)

Order, at 11.

The remarks of Sen. Mathias were not even directed to the Semiconductor Chip Protection Act of 1984, as passed by the Congress, but instead were made when the Senate was considering an earlier version of the Semiconductor Act (S. 1201) to provide chip protection by amending the Copyright Act, which was not made law.

Moreover, his remarks were not an expression of Congressional concern or intent, but rather related to concerns of certain witnesses who testified for proposed amendments to S. 1201.

With respect to the Semiconductor Act, Congress in fact likened the reverse engineering privilege of Section 906(a) to the copyright doctrine of fair use. "As with the fair use doctrine, reverse engineering is an affirmative defense," to be developed and adapted on a case by case basis. Id., at 536-37.² As in the case of copyrighted products, Congress wanted to ensure that once semiconductor chips passed into customers' hands, the owner of a mask work has "no right to try to exercise 'remote control' over the pricing or other business conduct of its semiconductor chip customers ... Accordingly, the Act specifies that purchasers of semiconductor chips have the right to use and resell them freely." Id. Likewise, in the present case, Sega has no right to extend its copyright on its program or object code to control the use of its object code once it has been offered for sale to the public, so long as Accolade has not appropriated Sega's copyrighted work.

Accolade has fairly reverse engineered Sega's object code to develop compatible game cartridges through study and analysis of the concepts, techniques and organization embodied in Sega's object code. Moreover, Accolade developed its own video games as a result of study and analysis, and not a result of plagiarism. Sega has not shown, nor has the court found, that Accolade's video games are an

² Congress, however, did not codify the fair use doctrine, as such, in Section 906.

appropriation of Sega's copyrighted work.

CONCLUSION

For the reasons given above, the district court's finding of copyright infringement is clearly erroneous. Therefore, it is respectfully submitted that the injunction was improvidently granted and this Court should remand to the district court to lift the injunction.

Respectfully submitted,

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